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ARTES SCIENTIA VERITAS

Twenty Lessons *in* Domestic Science

A Condensed Home Study Course
Marketing : Food Principals
Functions *of* Food
Methods *of* Cooking
Glossary *of* Usual Culinary Terms
Pronunciations and Definitions, Etc.

◆

PRICE $2.00

◆

by

MARIAN COLE FISHER
formerly of
St. Paul Institute of Arts and Science
Chautauqua Lecturer

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11th Edition
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INTRODUCTORY

MARKETING
(Family Budget)

System must be used in directing the marketing for the family.

One essential to proper marketing is a family budget. The budget for food must be subdivided to establish just how much money can be expended for various provisions. In this respect the value of the knowledge of a balanced ration is apparent. Without such knowledge the dispenser of the budget is like a ship without a rudder.

The family in moderate circumstances with a smaller budget must figure more closely than those in affluence; the family in poor circumstances can more easily and properly provide for the family needs by keeping a budget. In fact, the latter has greater need of a budget for expenses than the former.

Certain days should be marked as days for purchase of certain provisions. This may be determined by local markets.

The writer has not found the PARCELS POST altogether a satisfactory method of procuring produce—your local merchants who are, perchance, your neighbors, will feel a more intimate need for providing the quality commensurate with price than someone fifty or one hundred and fifty miles away, to whom you cannot return undesirable merchandise.

There is no food problem so complex as scientific marketing, complex because so many elements enter into a day's dietary.

BALANCED RATION

Always bear one thing in mind, the necessity of a ration which will provide necessary combinations to appease hunger, to furnish warmth, energy and tissue building material as well as to please the palate and the eye.

However, too much attention is often given to pleasing the palate rather than to furnishing nutrition. In planning each meal the bulky starchy foods predominate in quantity, the proteins second, fats and sweets third, while there should be sufficient liquid to act as a dissolving and distributing agent.

Baking: Cooking by hot air confined in an oven.

Slow Oven: Temperature is about 250 to 300 degrees Fahr.

Moderate Oven: Temperature is about 350 to 400 degrees Fahr.

Hot Oven: Temperature is 400 to 450 degrees Fahr.

Very Hot Oven: Temperature is 450 to 550 degrees Fahr.

Broiling: Is applying intense heat by means of open fire to sear the surfaces of fish or meat, then reducing heat until food is cooked. Temperature is 375 to 400 degrees Fahr.

Boiling: Cooking food in water at 212 degrees Fahr.

Liquids, heavier than plain water, reach a heat greater than 212 degrees Fahr., which is greatest heat of boiling water. Water heavily salted reaches more than 212 degrees.

Milk boils at 214 degrees Fahr.

Milk scalds at 196 degrees Fahr. when in double boiler.

Milk is pasteurized at 165 degrees Fahr., holding at that temperature twenty minutes.

Milk is sterilized at 212 degrees Fahr., holding that temperature half an hour.

Simmering: Cooking food in water below boiling point or about 185 degrees Fahr.

Braising: Cooking food in slow oven with moisture surrounding food in the pan.

Stewing: Cooking at 186 degrees Fahr.

Poaching: Cooking at 160-180 degrees Fahr.

Frying: Cooking in deep fats or oils:

First. Fat should be hot enough to prevent article absorbing it.

Second. Fat should entirely submerge the article.

Third. Article should not be wet or very cold.

Fourth. Some food requires special protection of egg and crumbs to prevent breaking apart or absorbing fat.

Fifth. All foods, after frying, should be drained on unglazed paper to eliminate superfluous fat.

Vegetable Oils are better for frying than lard or other animal fats, as they do not burn at as low a temperature and are not as readily absorbed by the food.

Batters and Doughs are the usual forms in which flour is used.

Thin Batter: One measure of liquid plus one and one-half measure of flour.

Very Thin Batter: One measure of liquid to one measure of flour.

Drop Dough: One measure of liquid to two measures of flour.

Stiff Dough: One measure of liquid to three measures of flour.

Leavening: Leavening other than yeast or baking powder is produced when SODA is added to neutralize the acid of SOUR MILK or MOLASSES. The gas thus formed is not as easily controlled, nor is it sufficient for the amount of flour which would be required to complete a mixture. Caution must be observed, therefore, in the combination of soda with such acids as are found in sour milk and molasses, not to use too much soda. The rule is to use just enough soda to neutralize the acid, then use one-half as much baking powder (CALUMET) as the same recipe would demand when made with sweet milk. The sweeter molasses and syrups do not require nearly as much soda as the black molasses. The sweeter or fresh buttermilk and the just turned milk do not require nearly as much soda as the longer standing buttermilk and the completely soured milk.

Rule for Use of Soda: One level teaspoon soda to two cups completely soured milk.

One-half level teaspoon soda to two cups just turned milk.

One level teaspoon soda to one cup dark molasses.

Rule for Use of Baking Powder: One level teaspoon of baking powder to each level cup of pastry flour in bread or cake making.

One and one-half level teaspoon of baking powder to each level cup of bread flour.

The teaspoon rounded or struck off on the edge of the can equals two level teaspoons and is more easily measured off by busy cooks than by leveling and then dividing.

To level a teaspoon, draw a knife over edges.

Important Equivalents to Memorize

1 quart flour (about) is equivalent to 1 pound avoirdupois
1 pint sugar (about) is equivalent to 1 pound avoirdupois.
1 pint butter (about) is equivalent to 1 pound avoirdupois.
1 quart is equivalent to 4 cups, liquid measure.
1 pint is equivalent to 2 cups, liquid measure.
½ pint is equivalent to 1 cup, liquid measure.
1 cup is equivalent to 2 gills.
2 gills are equivalent to 8 fluid ounces.
16 level tablespoons are equivalent to 1 cup liquid measure.
8 level tablespoons are equivalent to ½ cup liquid measure.
4 level tablespoons are equivalent to ¼ cup liquid measure.
1 level tablespoon is equivalent to 3 level teaspoonfuls.
2 level tablespoons sugar are equivalent to 1 ounce avoirdupois.
2 level tablespoons butter are equivalent to 1 ounce avoirdupois.
4 level tablespoons cocoa or flour is equivalent to 1 ounce avoirdupois.
2 level tablespoons liquid is equivalent to 1 ounce avoirdupois.
3 level teaspoons are equivalent to 1 tablespoonful.
2 level teaspoons are equivalent to 1 dessertspoonful.
1 square of chocolate is equivalent to 1 ounce of chocolate.
1 square of grated chocolate is equivalent to 4 level tablespoons of chocolate.
9 or 10 eggs, depending upon size, are equivalent to 1 pound.
1 lemon, juice of, is equivalent to about 4 tablespoons.
1 cup of egg white is equivalent to about 8 egg whites.
1 cup of egg yolk is equivalent to about 12 egg yolks.
1 cup of shelled nuts is equivalent to about 4 ounces.
Measures are always level, unless otherwise stated.

Directions for Measuring

Dip the spoon into the materials and strike off with straight edge of a knife.

In measuring butter, lard or margarine, pack the cup or spoon closely and strike off with the straight edge of a knife.

In measuring flour in the cup measure, tap the measure lightly to insure against unfilled spaces.

To measure ½ teaspoon divide a level teaspoonful lengthwise.

To measure ¼ teaspoon divide the half teaspoon once crosswise.

A heaping measure, whether spoonful or cupful, means all the measure will hold.

A teaspoon dipped full and drawn under the side of the can of CALUMET Baking Powder gives practically a teaspoon and a half. This is a quick method to measure the one and one-half teaspoon to each cup of flour in making breads, biscuit, muffins, etc.

In measuring CALUMET for cakes, dip the teaspoon full and level with a knife, one teaspoonful for each cupful of sifted flour.

The measuring cups for kitchen use vary in size. Most of the glass and aluminum are the half pint liquid measure. The half pint dry measuring cup, which is not easily distinguished, hold two level tablespoonfuls more than the liquid measure.

The half pint based on the dry pint measure was the original measuring cup for kitchen use. But manufacturers are now generally making the kitchen measuring cup to conform to the United States Bureau of Standards, standard liquid measure. The small difference between the liquid and dry measure carries little effect in the making of breads and cakes, so long as the several ingredients are measured in the same size cup to insure proper proportions.

Lesson Number One

The Function of Food

Hutchinson defines food as "anything which, when taken into the body, is capable of repairing its waste, or of furnishing it with material from which to produce heat for nervous and muscular work."

The two main functions of food are to provide warmth and energy, and to build tissue or repair waste. Energy includes muscular and nerve strength.

Certain foods provide energy but cannot rebuild tissues, while others provide energy and rebuild as well; nevertheless, some misguided housewives work on the principle that "a merciful Providence fashioned us 'holler' " and simply provide for filling this "holler" without reference to the real function of food. Food, therefore, must be selected with care and a well-balanced ration must be the housewife's study.

In this connection, three aspects at once present themselves for our consideration, viz.: the physiological, the economical and the moral. Vegetarians defend their theory of living with the plea that their practice is conducive to a healthier and longer life and to a better moral temperament than the use of a mixed diet; that it is less costly to the state and to the individual; and that the slaughter of animals for food is inhuman. However much weight their arguments may bear upon the individual, there are always present the habits which mankind has acquired and which enter largely into, or are controlled by, our pursuits as a whole.

We come now to the relation of food to the human system as to its assimilation and digestion. The kitchen is the chemical laboratory in which our food is converted from its crude state to a condition that is at once suitable and palatable.

The application of heat to various foods affects differently their condition for easy assimilation by the digestive system. Heat, when applied to meat, partially coagulates some of the proteins contained therein, thus rendering them less easy to assimilate, but on the other hand heat and moisture convert the insoluble connective tissues into soluble gelatin and thus the fibers are made easier of digestion. At the same time cooking kills disease germs, and parasites which are sometimes present.

COOKING is also of great importance in facilitating the digestion of vegetable foods. The action of heat and moisture breaks down the cellulose, bursts the starch grains and allows the digestive fluids to act more freely.

APPLICATION OF HEAT: After the ambitious young housewife has labored conscientiously to prepare for the oven her various pies, cakes and breads, observing accurate measure, proper consistency and careful mixing, she is often at a loss as to why her efforts have resulted in dismal failure or perhaps only a near success.

Such disappointment is nearly always caused through ignorance of the proper application of heat to the different articles to be baked. The following general rules will assist in securing the proper results.

Do not hurry the baking of bread, cakes or pies. Flour contains much starch, which must be thoroughly cooked, for the digestion or assimilation of raw or uncooked starch is comparatively slow and difficult. Have the oven at moderate heat to start the baking of these articles. It is also well to know that if the loaf of yeast bread is not well baked in the center, the yeast germ or plant, given the warmth and moisture of the digestive apparatus, will resume its work of fermentation, thus causing serious digestive inconvenience.

The medium loaf of bread requires about forty-five minutes.

Fruit pies should bake half an hour at least. Small tea biscuits require from ten to twelve minutes. Cake should not be allowed to brown until the mixture has risen to its full height, and is not ready to be taken from the oven until the surface near the center of the cake will spring back under a slight pressure of the finger.

Fruit pies have an annoying habit of leaking juice when not properly put together. No such difficulty will be experienced if three level tablespoons of flour are mixed well with the sugar that is used for each pie. A final precaution is to moiston the rim or edge of the under pastry before pressing the upper one closely to it.

Food Principles

For convenience, food is divided in five classes: Water, Protein, Fats, Carbohydrates, and Mineral Matter.

WATER ranks next to air as an essential to life. We will treat it only in its relation to food preparation.

Uses: We have constant use for water in the body. It quenches thirst; it aids in regulating body temperature; it aids digestion since it forms a part of all digestive secretions of the body and acts as a solvent, dissolving most substances and reducing them to a condition to be used in the body; it acts as a carrier; it enters into the formation of blood which carries building material to the various parts of the system, and it also carries off waste. Water constitutes about 65 per cent of the body.

The necessity for a clean sanitary source of water supply cannot be too strongly urged. If any uncertainty exists in regard to the water for food purposes it should be analyzed. Impure water cannot be always detected by color, taste or smell. Boiling will purify most water by destroying the bacteria, but boiling also changes its taste by removing mineral salts and dissolved gases. After water is boiled, pouring from one vessel to another, holding one considerably above the other, will restore some of the oxygen which has been driven out by boiling process.

CAUTIONS IN THE USE OF WATER: Do not use water left standing in open vessels. Use freshly boiled water for tea, coffee and cocoa. Keep kettles free from lime deposit that accumulates in the bottom.

Classification of Foods as Organic and Inorganic

(A) Organic foods are of animal and vegetable origin and include:

1. Proteins such as

a Albumen; b Casein; c Fibrin; d Gelatin; e Extractives; f Gluten; g Legumin.

Protein contains nitrogen. It is a muscle builder and is the food constituent that makes and repairs tissue. Foods rich in protein are lean meat, dried peas, beans, lentils, milk and cheese. Gelatin is not a real protein, and is not of such great food value. Protein like carbohyrates and fats, is capable of furnishing warmth and energy to the body.

2. Carbohydrates such as

Starch: Cereals, potatoes, roots.
Sugar: Cane, beet, fruit sugars.
Cellulose: Fruit and vegetable fiber.
} Vegetable carbohydrates

Glycogen or animal starch
Milk Sugar
} Animal carbohydrates.

CARBOHYDRATES give heat and energy.

Foods rich in carbohydrates include the starchy vegetables, as potatoes, cereals and their products, as flours, macaroni, spaghetti, noodles, breads, muffins, cake, biscuit, crackers, cornstarch and cereal puddings, etc., also tapioca, bananas and cocoa. Carbohydrates include the sweets, as cakes, icings, candies, preserves, jelly, rich breads, cookies, sweet puddings, stewed fruit, honey, syrups and sugary foods.

3. Fats or reserve-force foods are constituents of meats and fish, cream, butter, margarine, cream soup, cheese, olive, cottonseed and nut oils, ripe olives, nuts, rich pastry, suet pudding, fritters, all foods cooked in fats or oils, chocolate.

Fats like carbohydrates are valuable foods in that they produce warmth or energy. Weight for weight, fats produce 2¼ times the heat produced by carbohydrates or proteins.

(B) Inorganic foods include:

4. Mineral matter found in the ash of foods, consists of compounds of sodium, lime, iron, potash, sulphur, phosphorous. They are found principally in cereals, milk, meat, fish, fruit and vegetables, and in solution in water.

5. Water does not give heat or energy, but is useful in tissue building. The controlled evaporation of water from the body keeps it at a uniform temperature. Even solid foods contain large amounts of water.

Mineral salts and water enter into the composition of all tissues of the body.

ASSIMILATION

"THE IDEAL DIET is that combination of food which, while imposing the least burden upon the body, supplies it with exactly sufficient material to meet its wants." (Schuster.)

The man weighing 160 pounds and doing a moderate amount of muscular work requires the following amounts of food:

Three to five ounces of protein and sufficient carbohydrates and fat combined to produce 3,000 to 3,500 Calories. In this connection it may be stated that the food is ultimately burned in the body. This burning takes place slowly, and is known as oxidation.*

3,500 Calories is about equivalent to the amount of heat produced by burning a pound of coal.

The problem of a proper diet must be laid out along the lines above indicated. But the matter is far more complicated than would appear. Many other things must be considered. The proteins found in different foods, are not all the same. The casein of milk is different from the albumen of the egg. Experiments have shown that some proteids are more completely digested than others, and only the amount digested is of food value.

Then again different people have what are called idiosyncrasies, peculiar physical conditions precluding the use of foods common to the majority, though otherwise the person is physically normal. In catering to these peculiarities, or to preference in tastes, we must all the more bear in mind the necessity of proper amounts of the different food materials, protein, carbohydrates and fat.

THE DIGESTIBILITY OF FOODS as placed by Atwater is, viz.:

1st. The protein of ordinary animal foods may be readily and completely digested.

2nd. The protein of vegetable foods is much less easily digested than that of animal foods.

3rd. Animal fats are not as easily digested as vegetable oils.

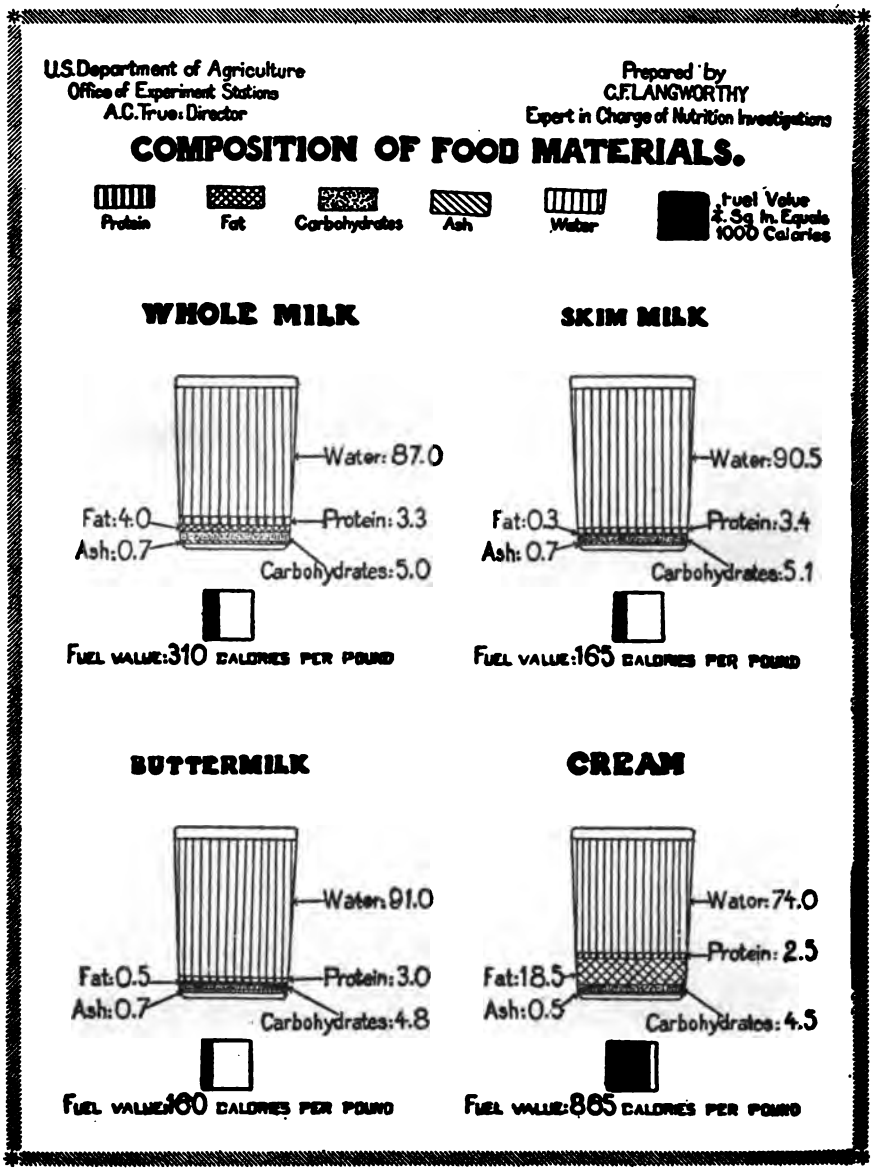
4th. Sugar and starch furnish heat and energy quickly.

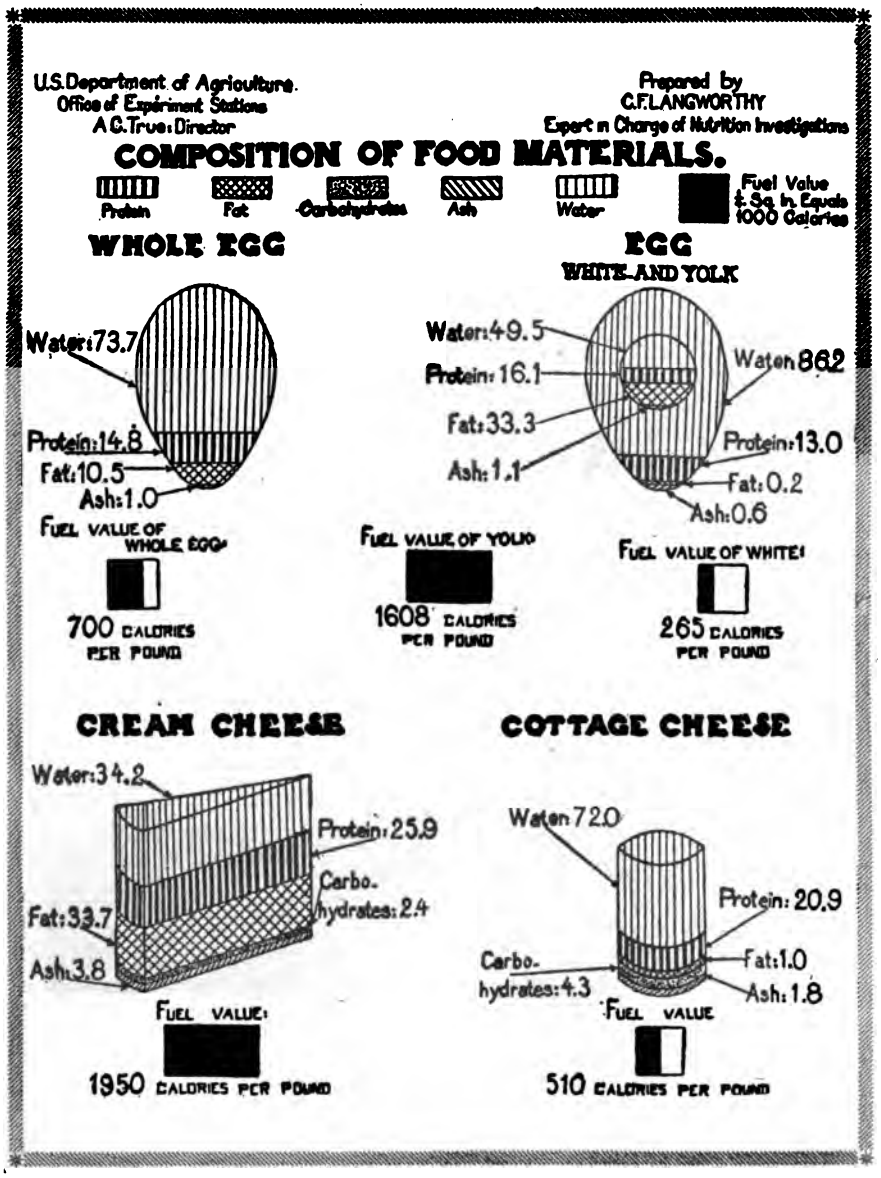
5th. Animal foods contain more proteins than vegetable foods and are more easily digested.

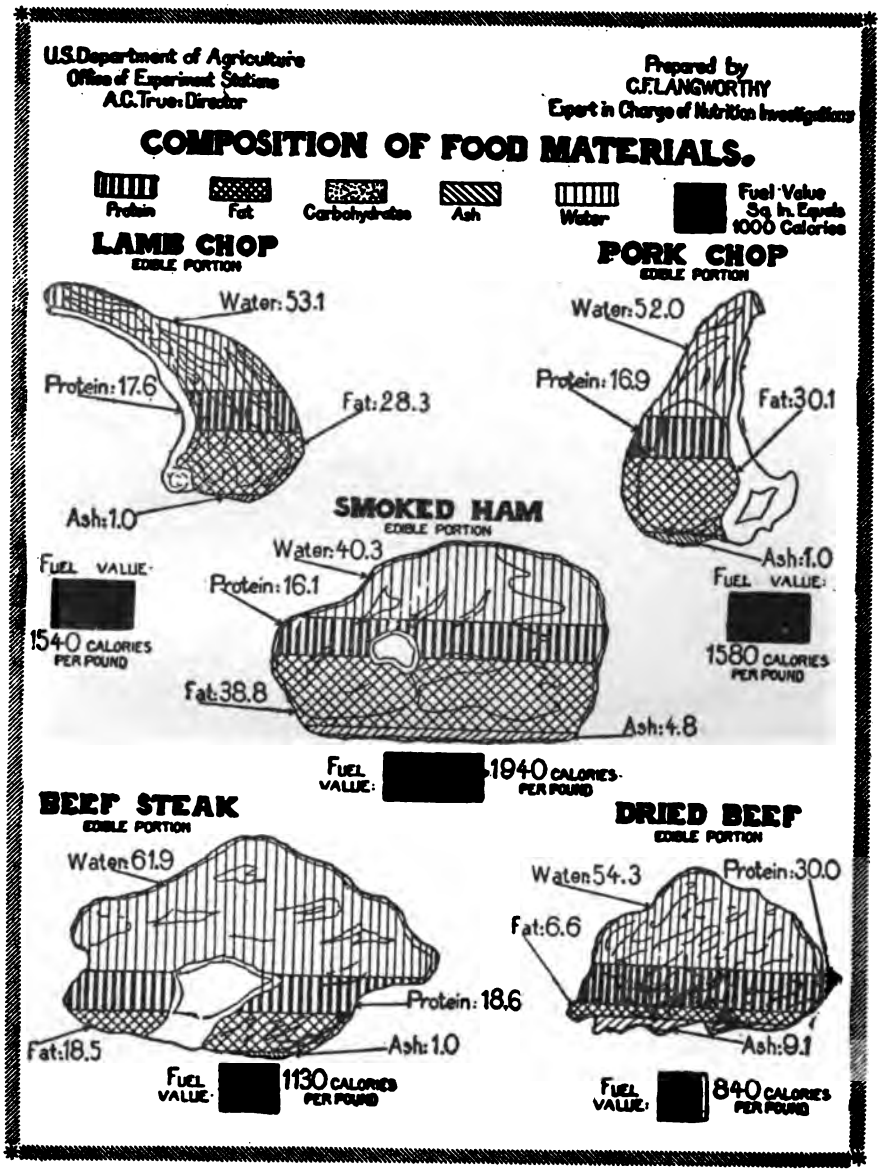
A diet of animal food leaves very little undigested matter.

*A Calorie is the amount of heat required to raise the temperature of one kilogram of water 1° centigrade or 1 pound of water 4° Fahr.

The following cuts made from charts by C. F. Langworthy of the U. S. Dept. of Agriculture, show graphically the amount of water, protein, fat, carbohydrates and mineral matter in some common foods.




U.S. Department of Agriculture.
Office of Experiment Stations
A.C. True, Director
Prepared by
C.F. LANGWORTHY
Expert in Charge of Nutrition Investigations
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value
1 Sq. In. Equals
1000 Calories
WHOLE EGG
Water: 73.7
Protein: 14.8
Fat: 10.5
Ash: 1.0
FUEL VALUE OF WHOLE EGG
700 CALORIES PER POUND
EGG
WHITE AND YOLK
Water: 49.5
Protein: 16.1
Fat: 33.3
Ash: 1.1
Water 86.2
Protein: 13.0
Fat: 0.2
Ash: 0.6
FUEL VALUE OF YOLK
1608 CALORIES PER POUND
FUEL VALUE OF WHITE
265 CALORIES PER POUND
CREAM CHEESE
Water: 34.2
Protein: 25.9
Carbo-hydrates: 2.4
Fat: 33.7
Ash: 3.8
FUEL VALUE
1950 CALORIES PER POUND
COTTAGE CHEESE
Water 72.0
Protein: 20.9
Carbo-hydrates: 4.3
Fat: 1.0
Ash: 1.8
FUEL VALUE
510 CALORIES PER POUND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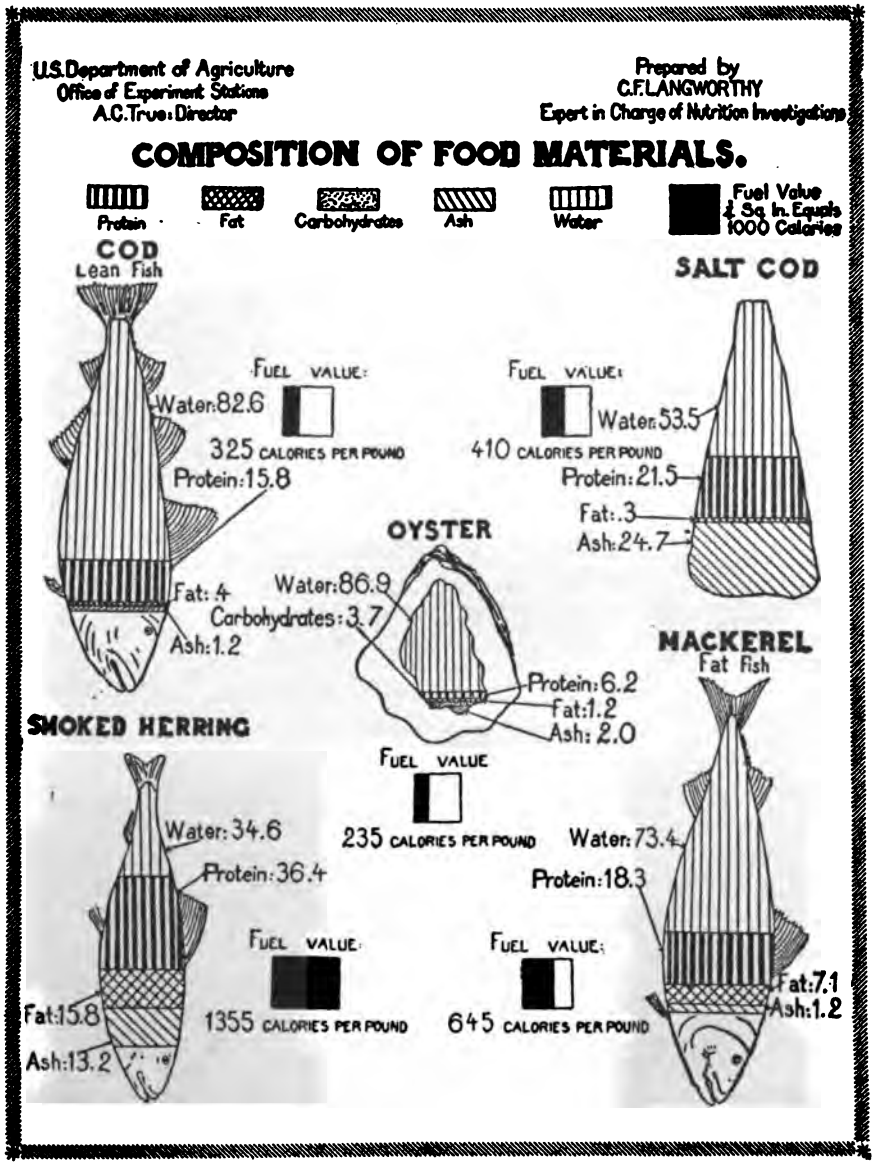
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value Sq. In. Equals 1000 Calories
LAMB CHOP
EDIBLE PORTION
Water: 53.1
Protein: 17.6
Fat: 28.3
Ash: 1.0
FUEL VALUE
1540 CALORIES PER POUND
PORK CHOP
EDIBLE PORTION
Water: 52.0
Protein: 16.9
Fat: 30.1
Ash: 1.0
FUEL VALUE
1580 CALORIES PER POUND
SMOKED HAM
EDIBLE PORTION
Water: 40.3
Protein: 16.1
Fat: 38.8
Ash: 4.8
FUEL VALUE
1940 CALORIES PER POUND
BEEF STEAK
EDIBLE PORTION
Water: 61.9
Protein: 18.6
Fat: 18.5
Ash: 1.0
FUEL VALUE
1130 CALORIES PER POUND
DRIED BEEF
EDIBLE PORTION
Water: 54.3
Protein: 30.0
Fat: 6.6
Ash: 9.1
FUEL VALUE
840 CALORIES PER POUND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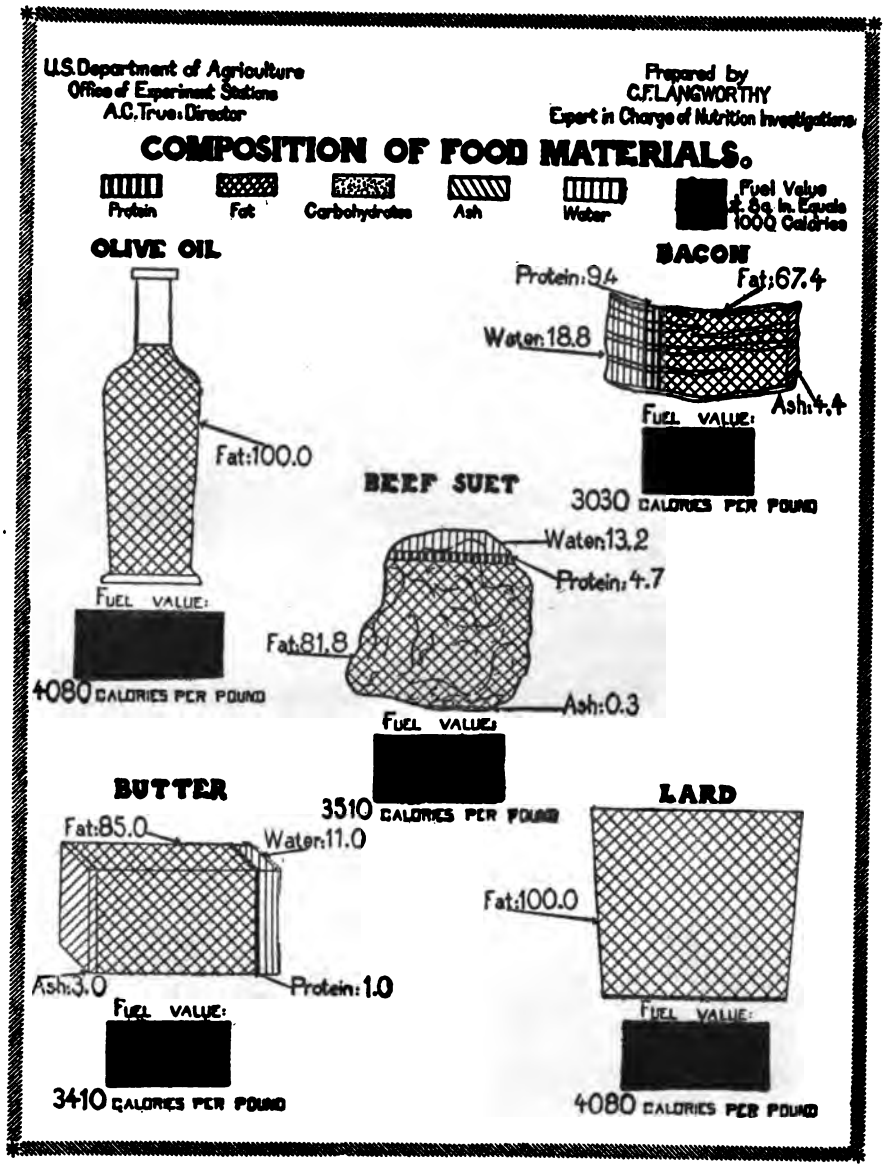
Office of Experiment Stations
A.C.True: Director
Prepared by
C.F.LANGWORTHY
Expert in Charge of Nutrition Investigations
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 1 Sq. In. Equals 1000 Calories
COD
Lean Fish
FUEL VALUE:
Water:82.6
325 CALORIES PER POUND
Protein:15.8
Fat: 4
Carbohydrates:3.7
Ash:1.2
SALT COD
FUEL VALUE:
Water:53.5
410 CALORIES PER POUND
Protein:21.5
Fat:.3
Ash:24.7
OYSTER
Water:86.9
Protein:6.2
Fat:1.2
Ash: 2.0
MACKEREL
Fat Fish
FUEL VALUE
235 CALORIES PER POUND
Water:73.4
Protein:18.3
Fat:7.1
Ash:1.2
SMOKED HERRING
Water: 34.6
Protein:36.4
FUEL VALUE:
1355 CALORIES PER POUND
Fat:15.8
Ash:13.2
FUEL VALUE:
645 CALORIES PER POUND


U.S. Department of Agriculture
Office of Experiment Stations
A.C. True, Director
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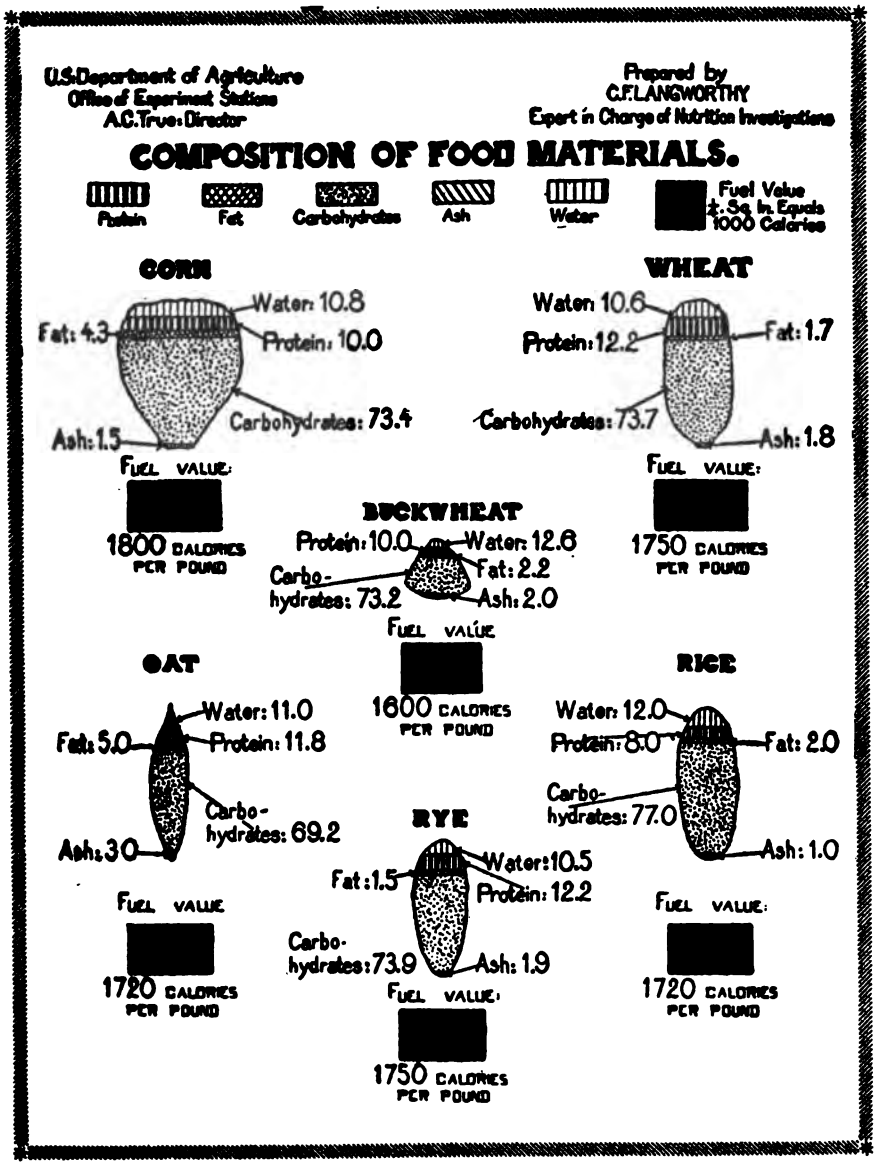
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value in Cal. Equals 100 Calories
OLIVE OIL
Fat:100.0
FUEL VALUE:
4080 CALORIES PER POUND
BACON
Protein:9.4
Fat:67.4
Water:18.8
Ash:4.4
FUEL VALUE:
3030 CALORIES PER POUND
BEEF SUET
Water:13.2
Protein:4.7
Fat:81.8
Ash:0.3
FUEL VALUE:
3510 CALORIES PER POUND
BUTTER
Fat:85.0
Water:11.0
Ash:3.0
Protein:1.0
FUEL VALUE:
3410 CALORIES PER POUND
LARD
Fat:100.0
FUEL VALUE:
4080 CALORIES PER POUND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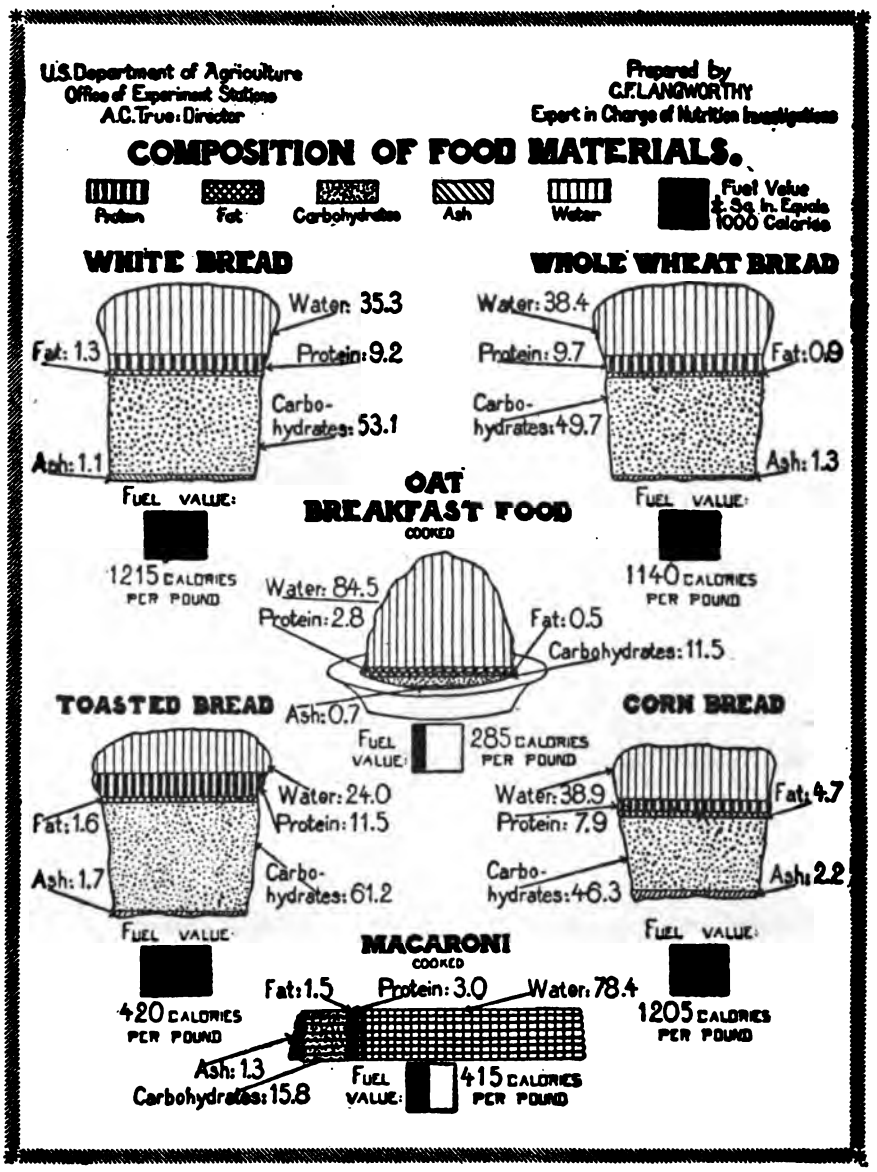
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 1 Sq. In. Equals 1000 Calories
CORN
Water: 10.8
Fat: 4.3
Protein: 10.0
Carbohydrates: 73.4
Ash: 1.5
FUEL VALUE:
1800 CALORIES PER POUND
WHEAT
Water: 10.6
Protein: 12.2
Fat: 1.7
Carbohydrates: 73.7
Ash: 1.8
FUEL VALUE:
1750 CALORIES PER POUND
BUCKWHEAT
Protein: 10.0
Water: 12.6
Carbo-hydrates: 73.2
Fat: 2.2
Ash: 2.0
FUEL VALUE
1600 CALORIES PER POUND
OAT
Water: 11.0
Fat: 5.0
Protein: 11.8
Carbo-hydrates: 69.2
Ash: 3.0
FUEL VALUE
1720 CALORIES PER POUND
RYE
Water: 10.5
Fat: 1.5
Protein: 12.2
Carbo-hydrates: 73.9
Ash: 1.9
FUEL VALUE:
1750 CALORIES PER POUND
RICE
Water: 12.0
Protein: 8.0
Fat: 2.0
Carbo-hydrates: 77.0
Ash: 1.0
FUEL VALUE:
1720 CALORIES PER POUND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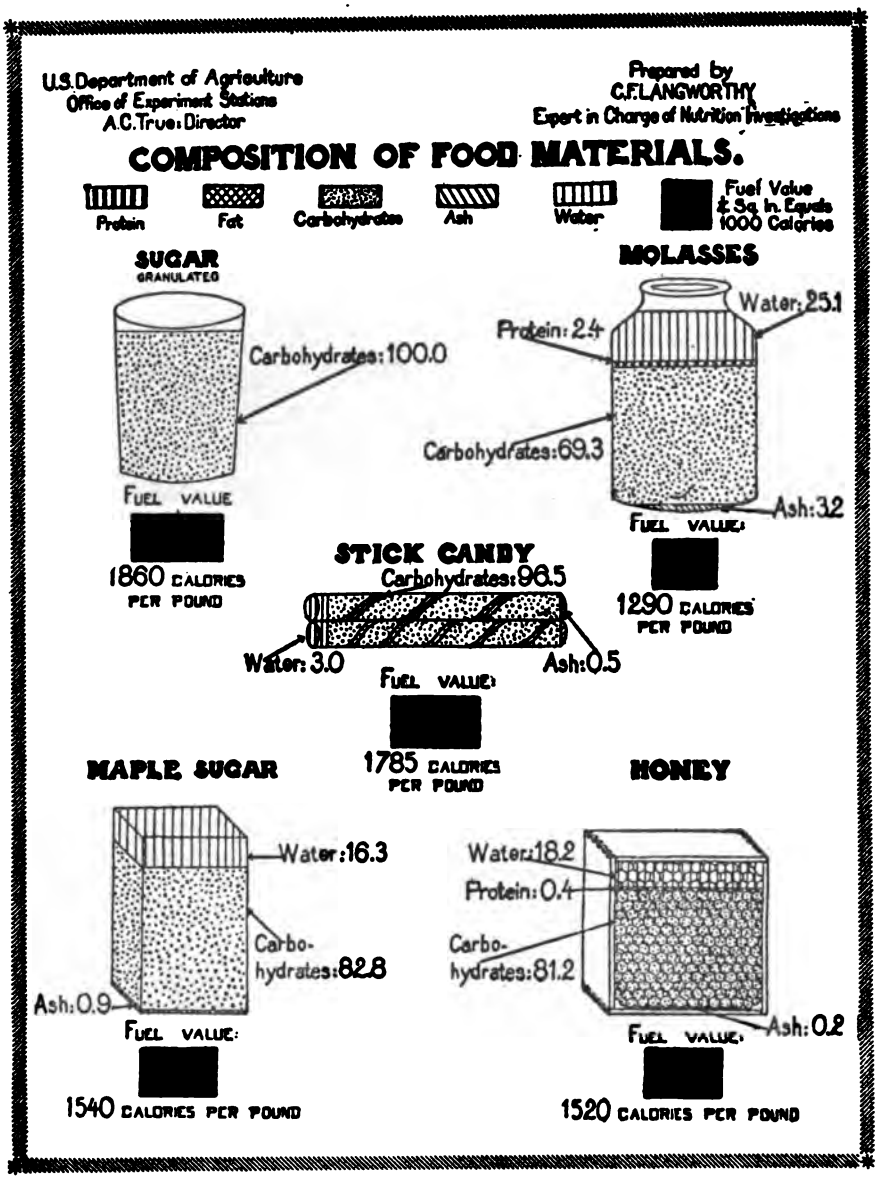
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 2 Sq. In. Equals 1000 Calories
WHITE BREAD
Water: 35.3
Protein: 9.2
Fat: 1.3
Carbo-hydrates: 53.1
Ash: 1.1
FUEL VALUE:
1215 CALORIES PER POUND
WHOLE WHEAT BREAD
Water: 38.4
Protein: 9.7
Fat: 0.9
Carbo-hydrates: 49.7
Ash: 1.3
FUEL VALUE:
1140 CALORIES PER POUND
OAT BREAKFAST FOOD
COOKED
Water: 84.5
Protein: 2.8
Fat: 0.5
Carbohydrates: 11.5
Ash: 0.7
FUEL VALUE:
285 CALORIES PER POUND
TOASTED BREAD
Water: 24.0
Protein: 11.5
Fat: 1.6
Ash: 1.7
Carbo-hydrates: 61.2
FUEL VALUE:
420 CALORIES PER POUND
CORN BREAD
Water: 38.9
Protein: 7.9
Fat: 4.7
Carbo-hydrates: 46.3
Ash: 2.2
FUEL VALUE:
1205 CALORIES PER POUND
MACARONI
COOKED
Fat: 1.5
Protein: 3.0
Water: 78.4
Ash: 1.3
Carbohydrates: 15.8
FUEL VALUE:
415 CALORIES PER POUND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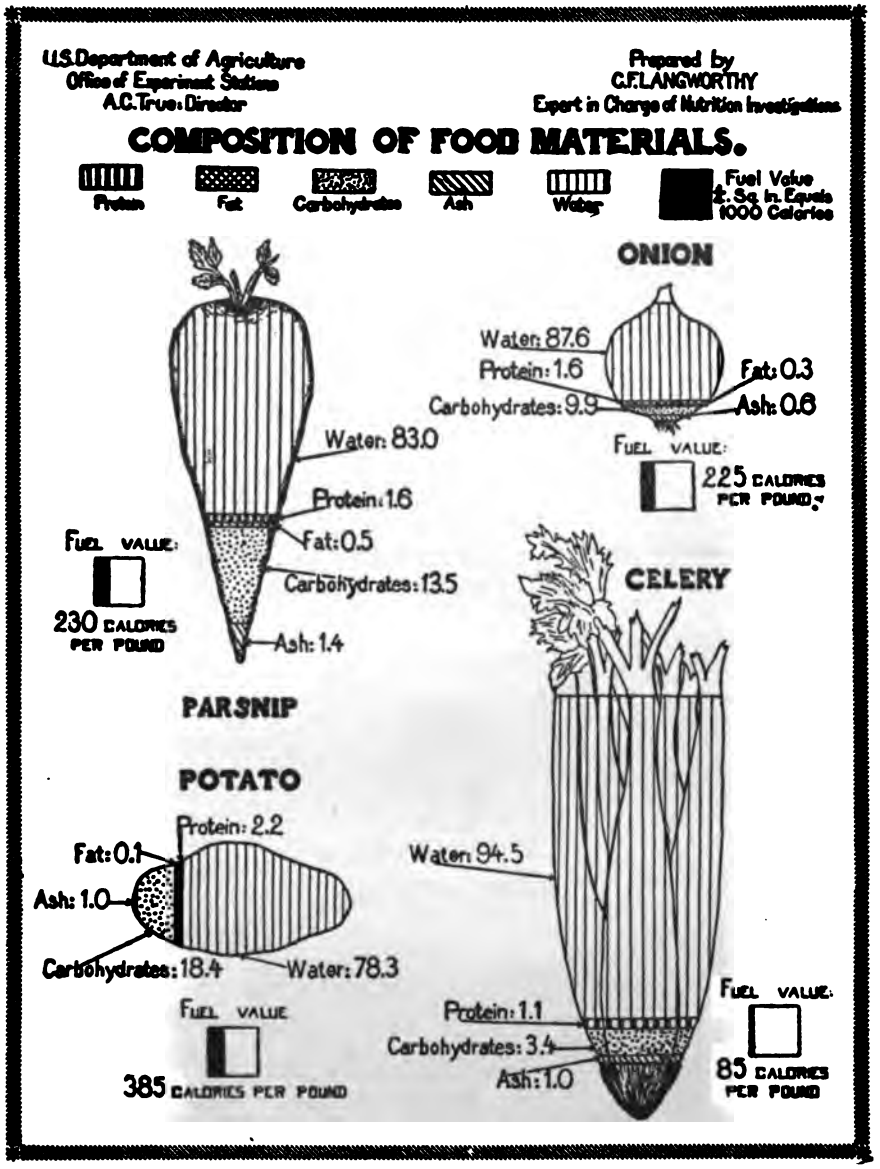
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value in Sq. In. Equals 1000 Calories
SUGAR
GRANULATED
Carbohydrates: 100.0
FUEL VALUE
1860 CALORIES PER POUND
MOLASSES
Water: 25.1
Protein: 2.4
Carbohydrates: 69.3
Ash: 3.2
FUEL VALUE:
1290 CALORIES PER POUND
STICK CANDY
Carbohydrates: 96.5
Water: 3.0
Ash: 0.5
FUEL VALUE:
1785 CALORIES PER POUND
MAPLE SUGAR
Water: 16.3
Carbo-hydrates: 82.8
Ash: 0.9
FUEL VALUE:
1540 CALORIES PER POUND
HONEY
Water: 18.2
Protein: 0.4
Carbo-hydrates: 81.2
Ash: 0.2
FUEL VALUE:
1520 CALORIES PER POUND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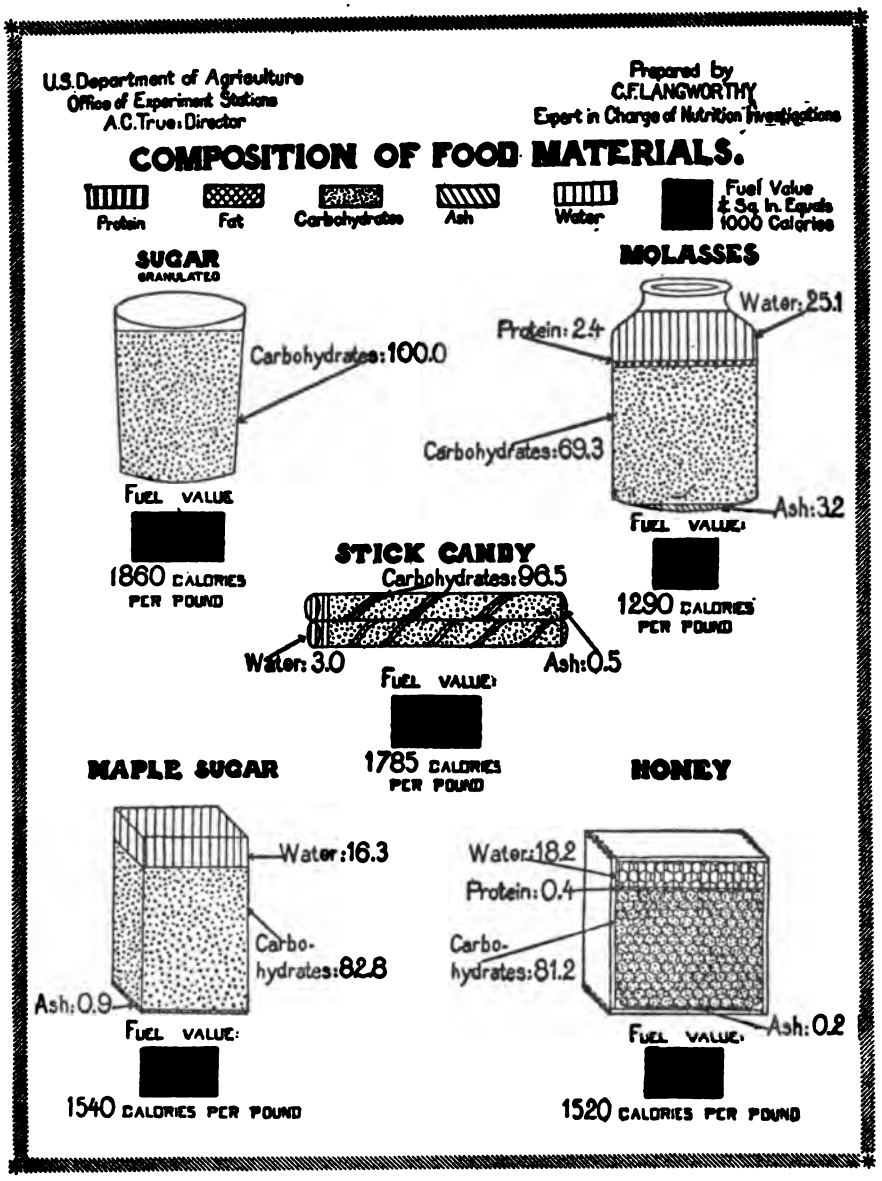
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 2. Sq. in. Equals 1000 Calories
ONION
Water: 87.6
Protein: 1.6
Carbohydrates: 9.9
Fat: 0.3
Ash: 0.6
FUEL VALUE:
225 CALORIES PER POUND.
Water: 83.0
Protein: 1.6
Fat: 0.5
Carbohydrates: 13.5
Ash: 1.4
FUEL VALUE:
230 CALORIES PER POUND
PARSNIP
CELERY
POTATO
Protein: 2.2
Fat: 0.1
Ash: 1.0
Carbohydrates: 18.4
Water: 78.3
FUEL VALUE
385 CALORIES PER POUND
Water: 94.5
Protein: 1.1
Carbohydrates: 3.4
Ash: 1.0
FUEL VALUE.
85 CALORIES PER POUND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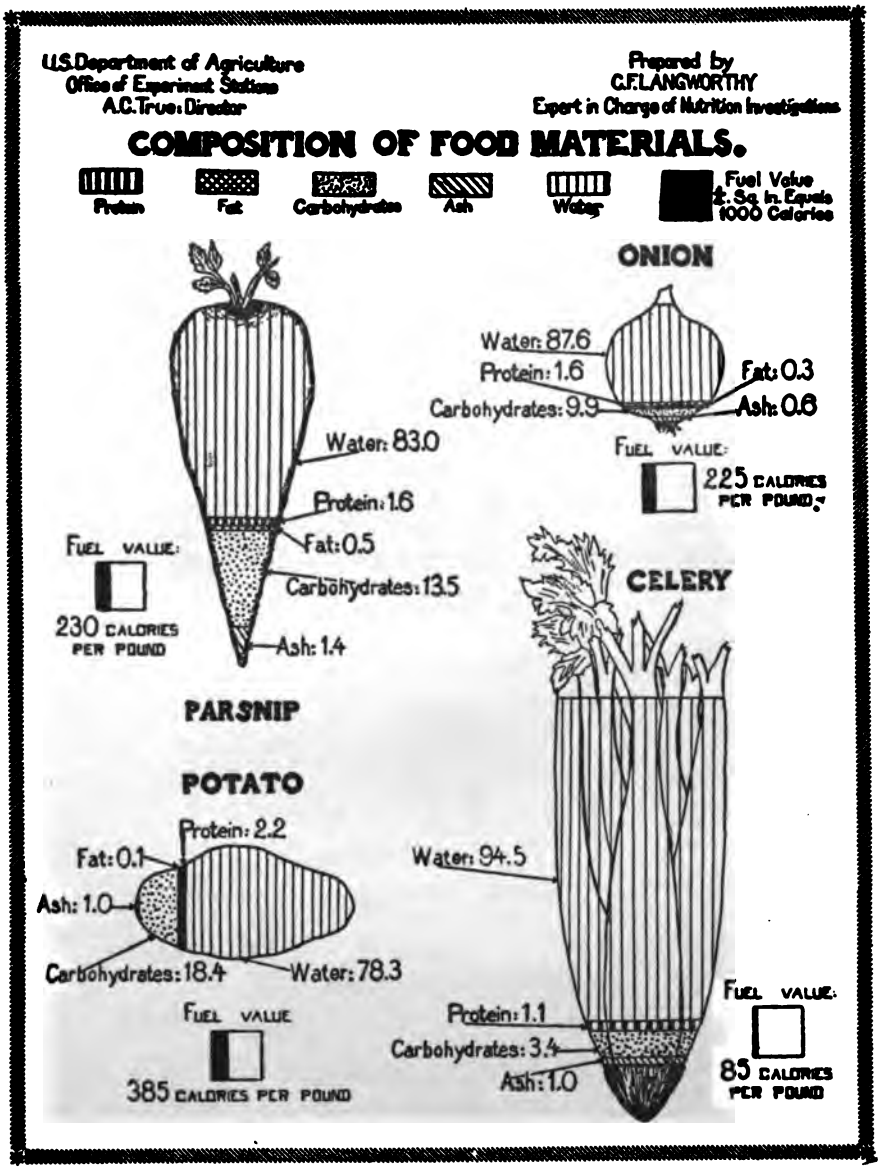
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value & Sq. In. Equals 1000 Calories
SUGAR
GRANULATED
Carbohydrates: 100.0
FUEL VALUE
1860 CALORIES PER POUND
MOLASSES
Water: 25.1
Protein: 2.4
Carbohydrates: 69.3
Ash: 3.2
FUEL VALUE:
1290 CALORIES PER POUND
STICK CANDY
Carbohydrates: 96.5
Water: 3.0
Ash: 0.5
FUEL VALUE:
1785 CALORIES PER POUND
MAPLE SUGAR
Water: 16.3
Carbo-hydrates: 82.8
Ash: 0.9
FUEL VALUE:
1540 CALORIES PER POUND
HONEY
Water: 18.2
Protein: 0.4
Carbo-hydrates: 81.2
Ash: 0.2
FUEL VALUE:
1520 CALORIES PER POUND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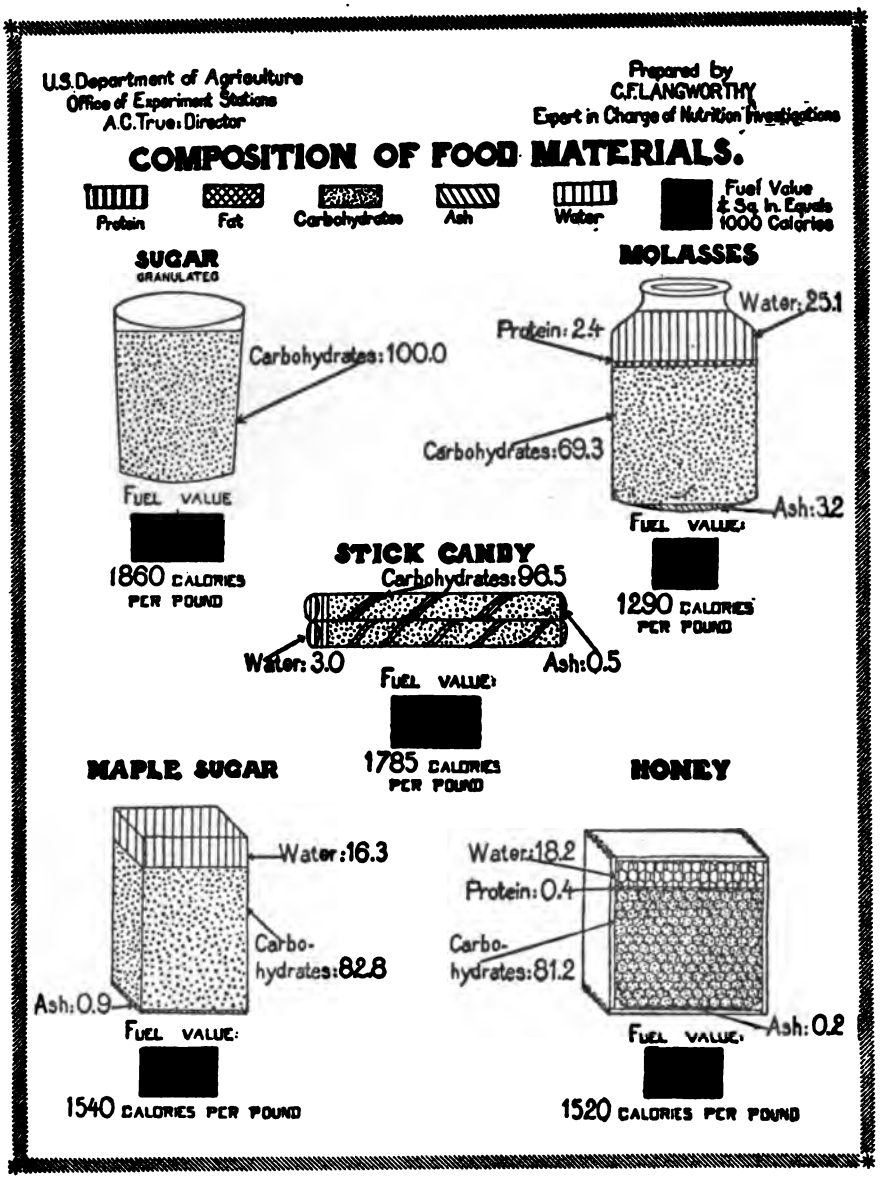
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 2 Sq. In. Equals 1000 Calories
ONION
Water: 87.6
Protein: 1.6
Fat: 0.3
Carbohydrates: 9.9
Ash: 0.6
FUEL VALUE:
225 CALORIES PER POUND
Water: 83.0
Protein: 1.6
Fat: 0.5
Carbohydrates: 13.5
Ash: 1.4
FUEL VALUE:
230 CALORIES PER POUND
PARSNIP
CELERY
POTATO
Protein: 2.2
Fat: 0.1
Ash: 1.0
Carbohydrates: 18.4
Water: 78.3
FUEL VALUE
385 CALORIES PER POUND
Water: 94.5
Protein: 1.1
Carbohydrates: 3.4
Ash: 1.0
FUEL VALUE:
85 CALORIES PER POUND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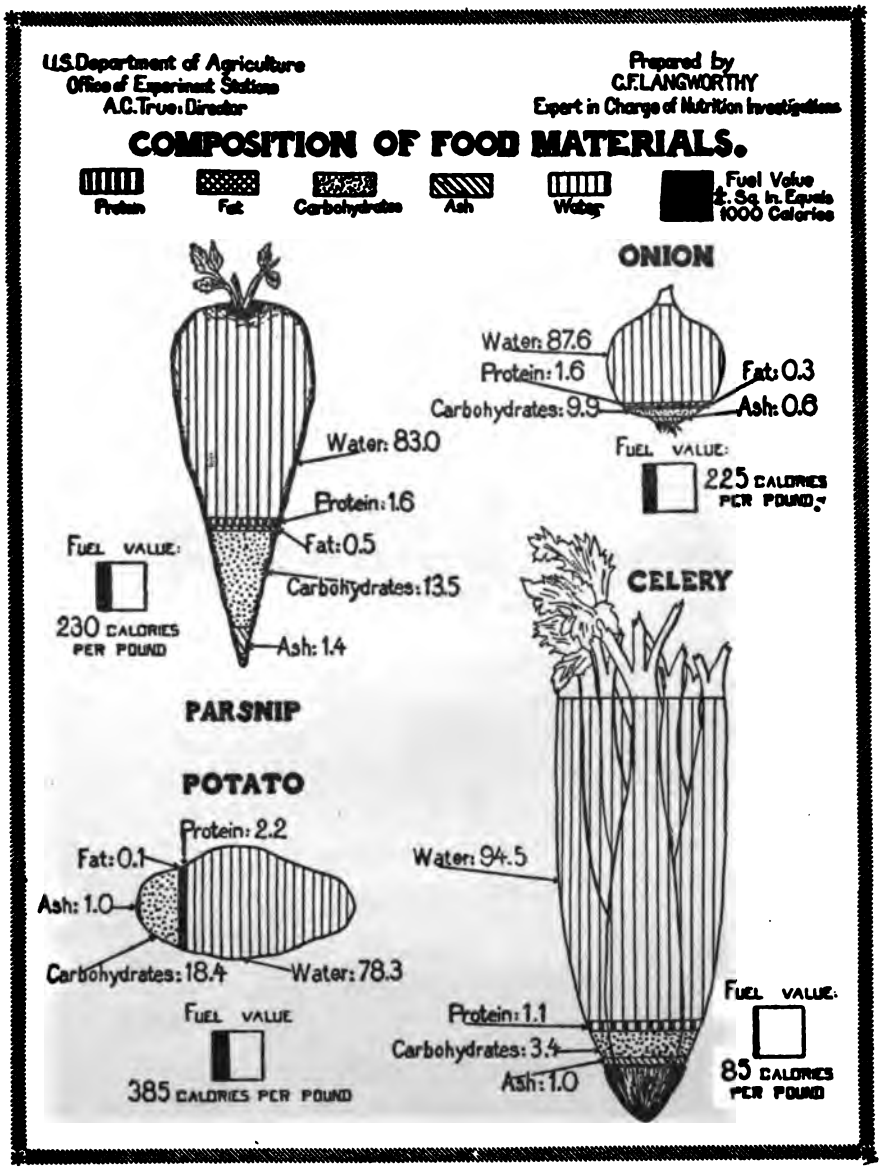
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value & Sq. In. Equals 1000 Calories
SUGAR
GRANULATED
Carbohydrates: 100.0
FUEL VALUE
1860 CALORIES PER POUND
MOLASSES
Water: 25.1
Protein: 2.4
Carbohydrates: 69.3
Ash: 3.2
FUEL VALUE:
1290 CALORIES PER POUND
STICK CANDY
Carbohydrates: 96.5
Water: 3.0
Ash: 0.5
FUEL VALUE:
1785 CALORIES PER POUND
MAPLE SUGAR
Water: 16.3
Carbo-hydrates: 82.8
Ash: 0.9
FUEL VALUE:
1540 CALORIES PER POUND
HONEY
Water: 18.2
Protein: 0.4
Carbo-hydrates: 81.2
Ash: 0.2
FUEL VALUE:
1520 CALORIES PER POUND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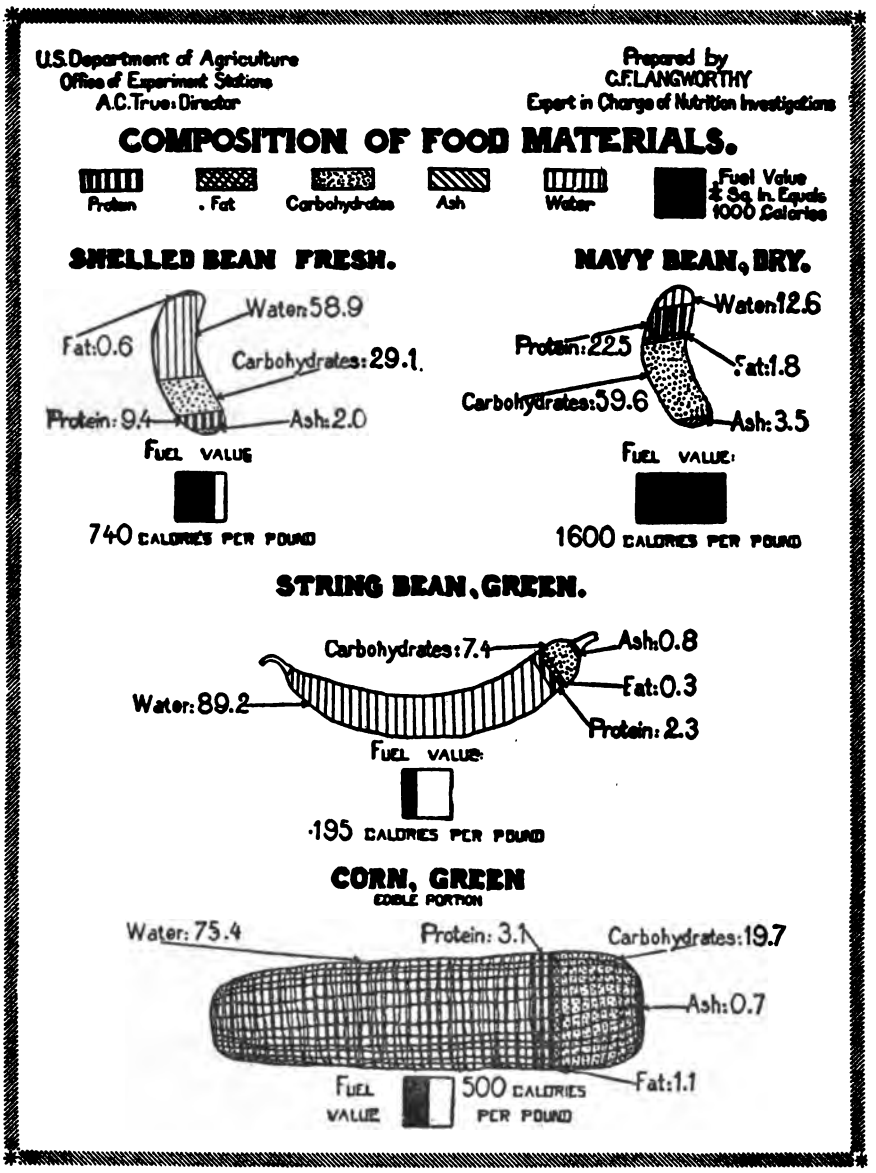
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 2. Sq. In. Equals 1000 Calories
ONION
Water: 87.6
Protein: 1.6
Carbohydrates: 9.9
Fat: 0.3
Ash: 0.6
FUEL VALUE:
225 CALORIES PER POUND
Water: 83.0
Protein: 1.6
Fat: 0.5
Carbohydrates: 13.5
Ash: 1.4
FUEL VALUE:
230 CALORIES PER POUND
PARSNIP
CELERY
POTATO
Protein: 2.2
Fat: 0.1
Ash: 1.0
Carbohydrates: 18.4
Water: 78.3
FUEL VALUE
385 CALORIES PER POUND
Water: 94.5
Protein: 1.1
Carbohydrates: 3.4
Ash: 1.0
FUEL VALUE:
85 CALORIES PER POUND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Office of Experiment Stations
A.C. True: Director
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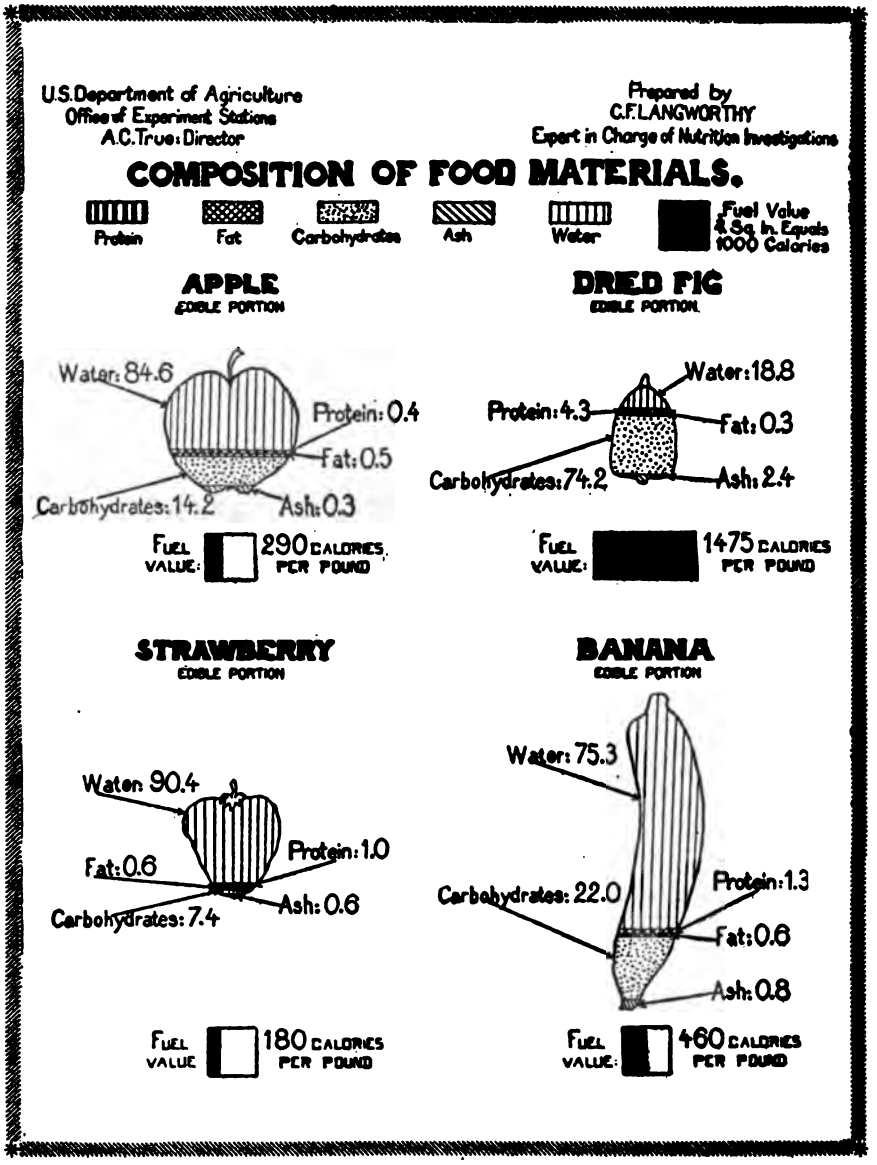
Expert in Charge of Nutrition Investigations
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 2 Sq. In. Equals 1000 Calories
SHELLED BEAN FRESH.
Water: 58.9
Fat: 0.6
Carbohydrates: 29.1
Protein: 9.4
Ash: 2.0
FUEL VALUE
740 CALORIES PER POUND
NAVY BEAN, DRY.
Water: 12.6
Protein: 22.5
Fat: 1.8
Carbohydrates: 59.6
Ash: 3.5
FUEL VALUE:
1600 CALORIES PER POUND
STRING BEAN, GREEN.
Carbohydrates: 7.4
Ash: 0.8
Water: 89.2
Fat: 0.3
Protein: 2.3
FUEL VALUE:
195 CALORIES PER POUND
CORN, GREEN
EDIBLE PORTION
Water: 75.4
Protein: 3.1
Carbohydrates: 19.7
Ash: 0.7
Fat: 1.1
FUEL VALUE
500 CALORIES PER POUND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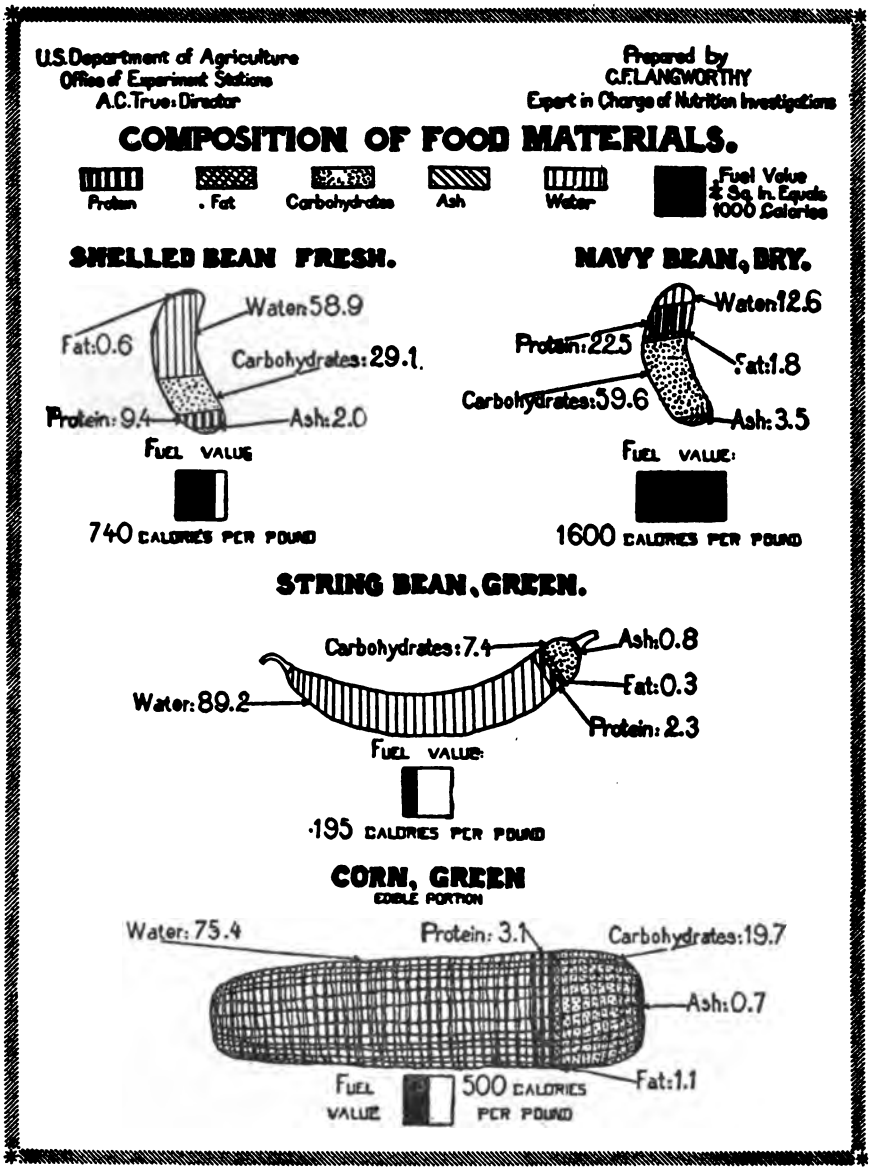
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 4 Sq. In. Equals 1000 Calories
APPLE
EDIBLE PORTION
Water: 84.6
Protein: 0.4
Fat: 0.5
Carbohydrates: 14.2
Ash: 0.3
FUEL VALUE: 290 CALORIES PER POUND
DRIED FIG
EDIBLE PORTION
Water: 18.8
Protein: 4.3
Fat: 0.3
Carbohydrates: 74.2
Ash: 2.4
FUEL VALUE: 1475 CALORIES PER POUND
STRAWBERRY
EDIBLE PORTION
Water: 90.4
Fat: 0.6
Protein: 1.0
Carbohydrates: 7.4
Ash: 0.6
FUEL VALUE 180 CALORIES PER POUND
BANANA
EDIBLE PORTION
Water: 75.3
Carbohydrates: 22.0
Protein: 1.3
Fat: 0.6
Ash: 0.8
FUEL VALUE: 460 CALORIES PER POUND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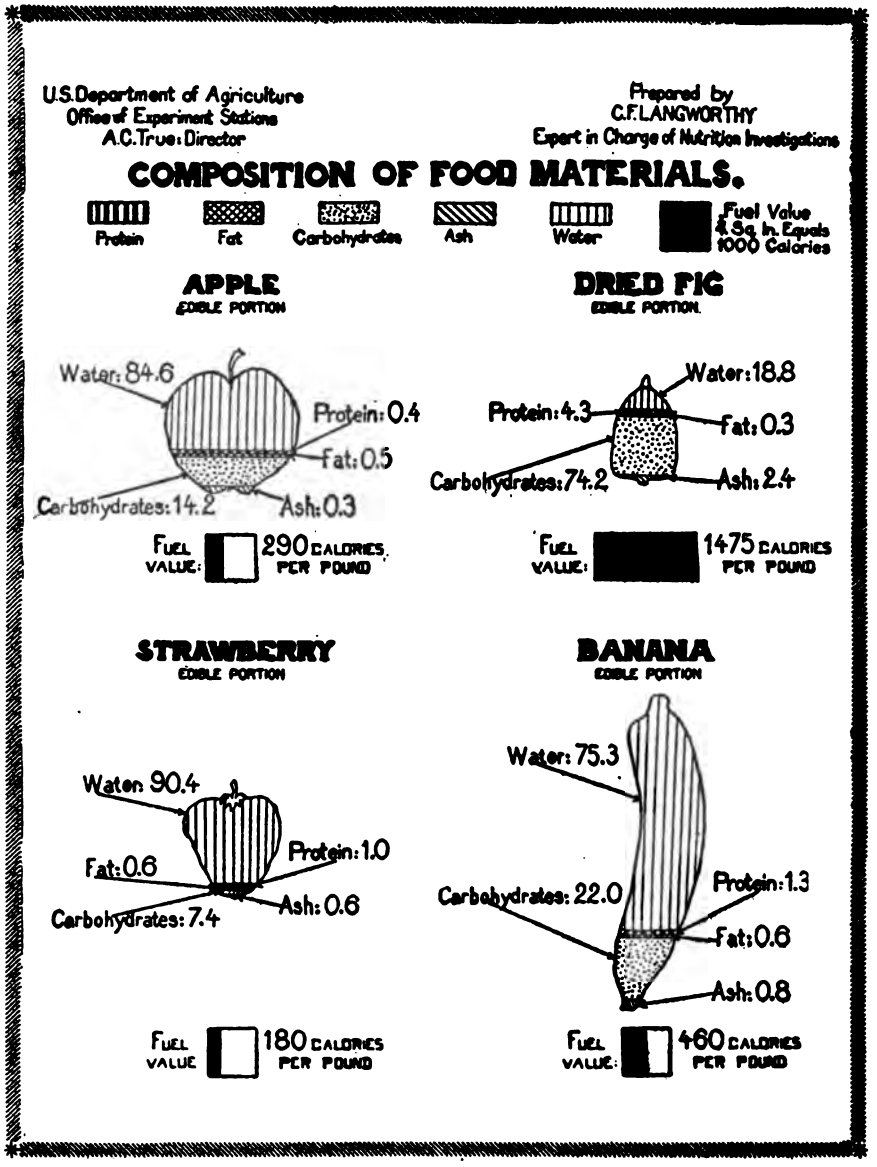
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 2 Sq. In. Equals 1000 Calories
SHELLED BEAN FRESH.
Water: 58.9
Fat: 0.6
Carbohydrates: 29.1
Protein: 9.4
Ash: 2.0
FUEL VALUE
740 CALORIES PER POUND
NAVY BEAN, DRY.
Water: 12.6
Protein: 22.5
Fat: 1.8
Carbohydrates: 59.6
Ash: 3.5
FUEL VALUE:
1600 CALORIES PER POUND
STRING BEAN, GREEN.
Carbohydrates: 7.4
Ash: 0.8
Water: 89.2
Fat: 0.3
Protein: 2.3
FUEL VALUE:
195 CALORIES PER POUND
CORN, GREEN
EDIBLE PORTION
Water: 75.4
Protein: 3.1
Carbohydrates: 19.7
Ash: 0.7
Fat: 1.1
FUEL VALUE
500 CALORIES PER POUND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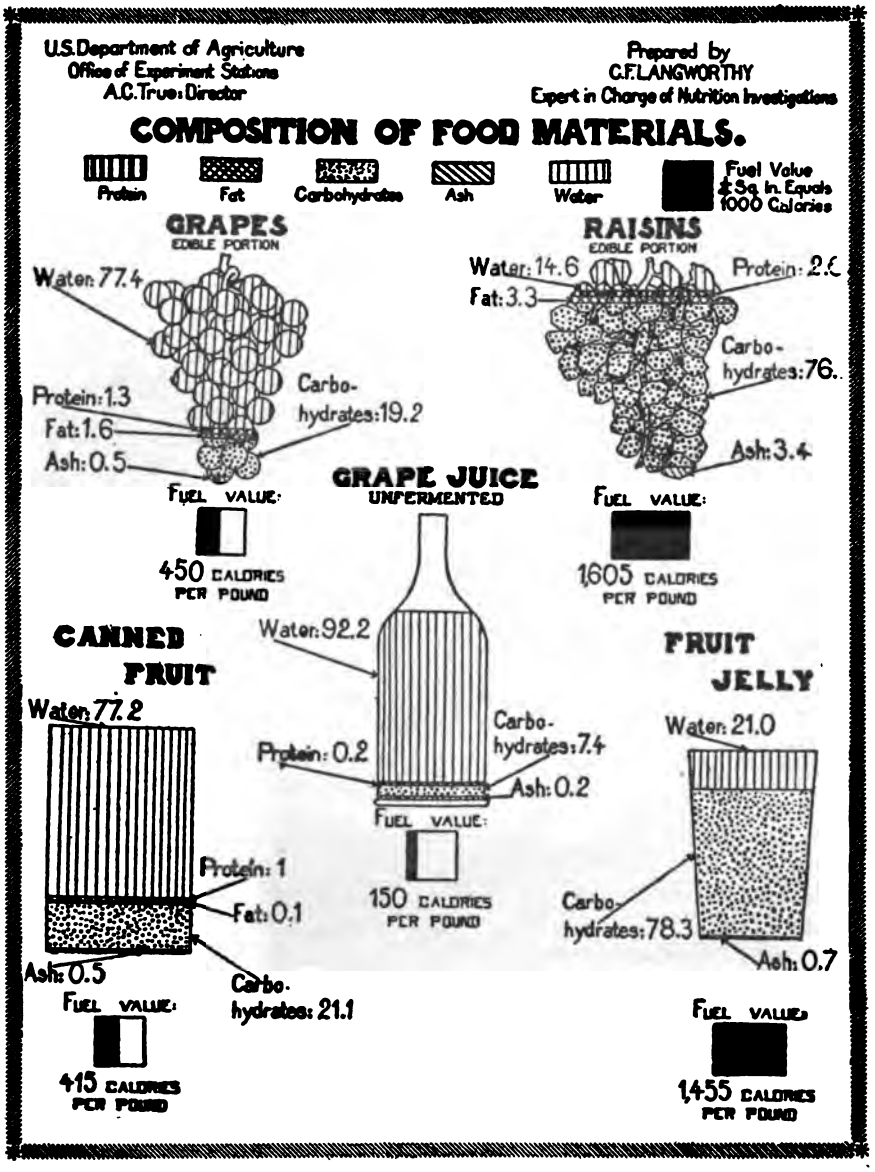
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 4 Sq. In. Equals 1000 Calories
APPLE
EDIBLE PORTION
Water: 84.6
Protein: 0.4
Fat: 0.5
Carbohydrates: 14.2
Ash: 0.3
FUEL VALUE: 290 CALORIES PER POUND
DRIED FIG
EDIBLE PORTION
Water: 18.8
Protein: 4.3
Fat: 0.3
Carbohydrates: 74.2
Ash: 2.4
FUEL VALUE: 1475 CALORIES PER POUND
STRAWBERRY
EDIBLE PORTION
Water: 90.4
Fat: 0.6
Protein: 1.0
Carbohydrates: 7.4
Ash: 0.6
FUEL VALUE 180 CALORIES PER POUND
BANANA
EDIBLE PORTION
Water: 75.3
Carbohydrates: 22.0
Protein: 1.3
Fat: 0.6
Ash: 0.8
FUEL VALUE: 460 CALORIES PER POUND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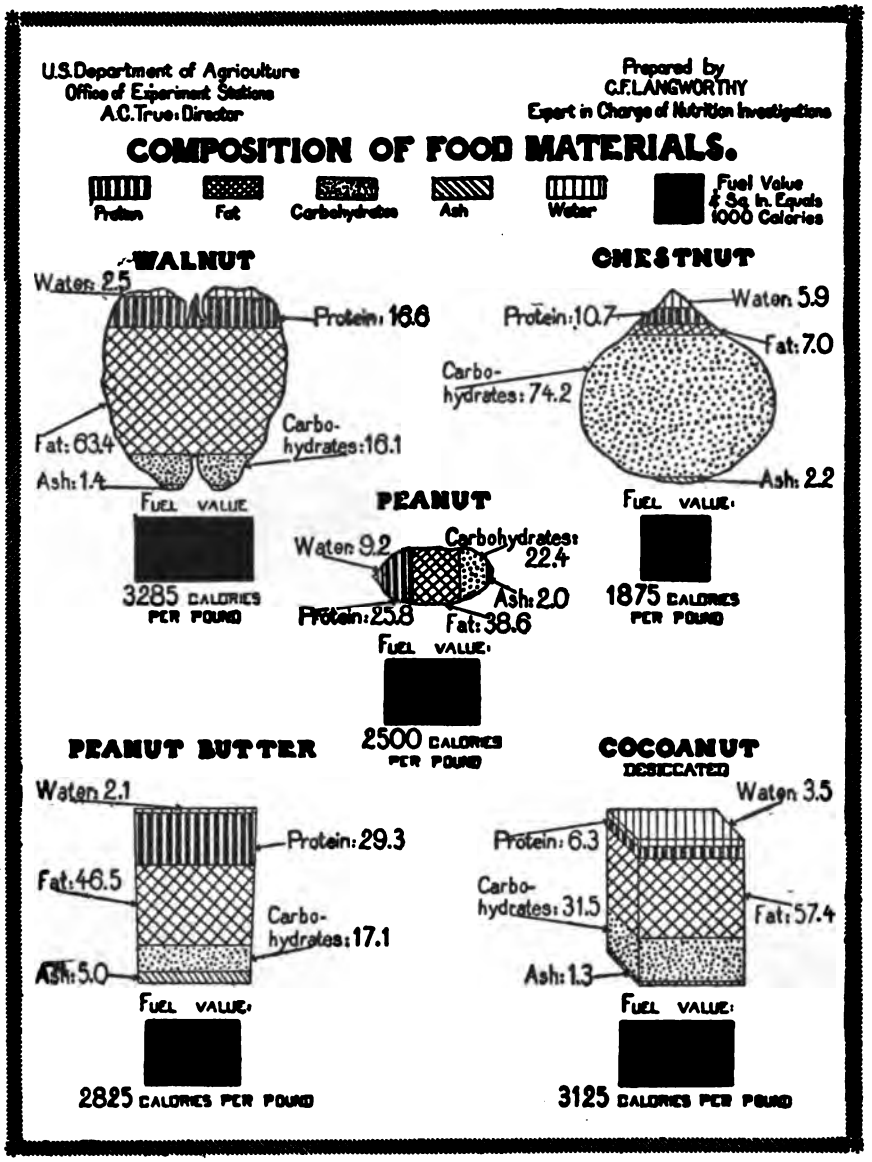
COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value of Sq. In. Equals 1000 Calories
GRAPES
EDIBLE PORTION
Water: 77.4
Protein: 1.3
Fat: 1.6
Ash: 0.5
Carbo-hydrates: 19.2
FUEL VALUE:
450 CALORIES PER POUND
RAISINS
EDIBLE PORTION
Water: 14.6
Fat: 3.3
Protein: 2.
Carbo-hydrates: 76.
Ash: 3.4
FUEL VALUE:
1605 CALORIES PER POUND
GRAPE JUICE
UNFERMENTED
Water: 92.2
Protein: 0.2
Carbo-hydrates: 7.4
Ash: 0.2
FUEL VALUE:
150 CALORIES PER POUND
CANNED FRUIT
Water: 77.2
Protein: 1
Fat: 0.1
Ash: 0.5
Carbo-hydrates: 21.1
FUEL VALUE:
415 CALORIES PER POUND
FRUIT JELLY
Water: 21.0
Carbo-hydrates: 78.3
Ash: 0.7
FUEL VALUE:
1455 CALORIES PER POUND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COMPOSITION OF FOOD MATERIALS.
Protein
Fat
Carbohydrates
Ash
Water
Fuel Value 4 Sq. In. Equals 1000 Calories
WALNUT
Water: 2.5
Protein: 16.6
Fat: 63.4
Carbo-hydrates: 16.1
Ash: 1.4
FUEL VALUE
3285 CALORIES PER POUND
CHESTNUT
Protein: 10.7
Water: 5.9
Fat: 7.0
Carbo-hydrates: 74.2
Ash: 2.2
FUEL VALUE
1875 CALORIES PER POUND
PEANUT
Water: 9.2
Carbohydrates: 22.4
Ash: 2.0
Protein: 25.8
Fat: 38.6
FUEL VALUE
2500 CALORIES PER POUND
PEANUT BUTTER
Water: 2.1
Protein: 29.3
Fat: 46.5
Carbo-hydrates: 17.1
Ash: 5.0
FUEL VALUE
2825 CALORIES PER POUND
COCOANUT
DESICCATED
Water: 3.5
Protein: 6.3
Carbo-hydrates: 31.5
Fat: 57.4
Ash: 1.3
FUEL VALUE
3125 CALORIES PER POUND

U.S. Department of Agriculture
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A.C. True, Director.

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Expert in charge of Nutrition Investigations.

FUNCTIONS AND USES OF FOOD.

CONSTITUENTS OF FOOD.

FOOD AS PURCHASED CONTAINS
- EDIBLE PORTION — Flesh of meat, yolk and white of eggs, wheat flour, etc.
  - Water
  - Nutrients
    - Protein
    - Fats
    - Carbohydrates
    - Mineral Matter Or Ash
- REFUSE — Bones, entrails, shells, bran, etc.

USE OF FOOD IN THE BODY.

PROTEIN---------- Builds and repairs tissue
White (albumen) of eggs,
curd (casein) of milk,
lean meat, gluten of wheat, etc.

FATS---------- Are stored as fat
Fat of meat, butter,
olive oil, oils of corn
and wheat, etc

CARBOHYDRATES---- Are transformed into fat
Sugar, starch, etc.

All serve as fuel to yield energy in the forms of heat and muscular power.

MINERAL MATTER OR ASH--- Share in forming bone,
Phosphates of lime, assists in digestion, etc.
potash, soda, etc

Food is that which, taken into the body, builds tissue or yields energy

U.S. Department of Agriculture
Office of Experiment Stations
A.C. True, Director

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DIETARY STANDARDS.

DIETARY STANDARD FOR MAN IN FULL VIGOR AT MODERATE MUSCULAR WORK.

Condition considered	Protein	Energy
	Grams	Calories
Food as purchased	115	3,800
Food eaten	100	3,500
Food digested	95	3,200

ESTIMATED AMOUNT OF MINERAL MATTER REQUIRED PER MAN PER DAY.

	Grams		Grams
Phosphoric acid (P_2O_5)	3 to 4	Calcium oxid	0.7 to 1.0
Sulphuric acid (SO_3)	2 to 3.5	Magnesium oxid	0.3 0.5
Potassium oxid	2 to 3	Iron	0.006 to 0.012
Sodium oxid	4 to 6	Chlorin	6 to 8

COMPOSITION OF FOOD MATERIALS

Kind of Food	Protein	Fat	Carbohydrates.	Ash.	Water	Calories per pound
Smoked herring	26.4	15.8	.....	13.2	34.6	1355
Dried beef	30.0	6.6	.....	9.1	54.3	840
Peanut butter	29.3	46.5	17.1	5.0	2.1	2825
Cream cheese	25.9	3.7	2.4	3.8	34.2	1950
Peanuts	25.8	38.6	22.4	2.0	9.2	2500
Navy bean, dry green	22.5	1.8	59.6	3.5	12.6	1600
Salt cod	21.5	.3	.....	24.7	53.5	410
Cottage cheese	20.9	1.0	4.3	1.8	72.0	510
Beef steak	18.6	18.5	.....	1.0	61.9	1130
Mackerel, fresh	18.3	7.1	.....	1.2	73.4	645
Lamp chop	17.6	28.3	.....	1.0	53.1	1540
Pork chop	16.9	30.1	.....	1.0	52.0	1580
Walnut	16.6	63.4	16.1	1.4	2.5	3285
Smoked ham	16.1	38.5	.....	4.8	40.3	1940
Yolk of egg	16.1	33.3	.....	1.1	49.5	1608
Cod lean fish	15.8	.4	.....	1.2	82.6	325
Whole egg	14.8	10.5	.....	1.0	73.7	700
White of egg	13.0	0.2	.....	0.6	86.2	265
Wheat	12.2	1.7	73.7	1.8	10.6	1750
Rye	12.2	1.5	73.9	1.9	10.5	1750
Oat	11.8	5.0	69.2	30.0	11.0	1720
Toasted bread	11.5	1.6	61.2	1.7	24.0	1420
Chestnut	10.7	7.0	74.2	2.2	5.9	1875
Corn	10.0	4.3	73.4	1.5	10.8	1800
Buckwheat	10.0	2.2	73.2	2.0	12.6	1600
Whole wheat bread, oat	9.7	0.9	49.7	1.3	38.4	1140
Bacon	9.4	67.4	.....	4.4	18.8	3080
Shelled bean	9.4	0.6	29.1	2.0	58.9	740
White bread	9.2	1.3	53.1	1.1	35.3	1215
Rice	8.0	2.0	77.0	1.0	12.0	1720
Corn bread	7.9	4.7	46.3	2.2	38.9	1205
Cocoanut (desiccated)	6.3	57.4	31.5	1.3	3.5	3125
Oyster	6.2	1.2	3.7	2.0	86.9	285
Beef suet	4.7	81.8	.....	0.2	13.2	3510
Dried fig	4.3	0.3	74.2	2.4	18.8	1475
Skim milk	3.4	0.3	5.1	0.7	90.5	165
Whole milk	3.3	4.0	5.0	0.7	87.0	310
Corn, green	3.1	1.1	19.7	0.7	75.4	500
Macaroni, cooked	3.0	1.5	15.8	1.3	78.4	415
Buttermilk	3.0	0.5	4.8	0.7	91.0	160
Breakfast food (cooked)	2.8	0.5	11.5	0.7	84.5	285
Raisins	2.6	3.2	76.1	3.4	14.6	1605
Cream	2.5	18.5	4.5	0.5	74.0	865
Molasses	2.4	.....	69.3	3.2	25.1	1290
String bean	2.3	0.3	7.4	0.8	89.2	195
Potato	2.2	0.1	16.4	1.0	78.3	385
Parsnip	1.6	0.5	13.5	1.4	83.0	330
Onion	1.6	0.3	9.9	0.6	87.6	225
Grapes	1.3	1.6	19.2	0.5	77.4	450
Banana	1.3	0.6	22.0	0.8	75.3	460
Canned fruit	1.1	0.1	21.1	0.5	77.2	415
Celery	1.1	.....	3.4	1.0	94.5	85
Butter	1.0	85.0	.....	3.0	11.0	3410
Strawberry	1.0	0.6	7.4	0.6	90.4	180
Apple	0.4	0.5	14.0	0.3	84.6	290
Honey	0.4	.....	81.2	0.2	18.2	1520
Grape juice	0.2	.....	7.4	0.2	92.2	150
Olive oil	.....	100.0	.....	.....	.....	4080
Lard	.....	100.0	.....	.....	.....	4080
Sugar, granulated	.....	.....	100.0	.....	.....	1860
Stick candy	.....	.....	96.5	0.5	3.0	1785
Maple sugar	.....	.....	82.8	0.9	16.3	1540
Fruit jelly	.....	.....	78.3	0.7	21.0	1455

Lesson Number Two

Leavening Agents

"The common leavening agents in use in the home are yeast and baking powder. Yeast is a microscopic plant which, in the leavening process, produces changes which finally result in the breaking up of sugars into alcohol and carbon dioxid gas. Baking powder is a mixture of several substances which produce this same gas by chemical action. This gas, by forming in small bubbles throughout the dough mass, lightens or leavens it. Carbon dioxid gas is sometimes called carbonic acid gas. This is the gas which is present in all carbonated waters, whether natural as in springs or artificial as in soda fountain waters."

N. B.—The *text* of this chapter is taken with the permission of the author, Thomas G. Atkinson, from Domestic Science Text Book, Baking Powder, A Healthful, Convenient Leavening Agent.

Baking Powder a Necessity

Baking powder has done much to lighten and decrease the hours of labor of the housewife. It has made possible the easy and rapid production of many new, dainty and nutritious foods. The best powder may be purchased at a mdoerate price and the wholesomeness of the food prepared therefrom need not be questioned. That it is a convenience that cannot be dispensed with is appreciated most by those who use it most intelligently.

Use of Baking Powder

The use of baking powder has become very general throughout the United States. The Memorial of the American Baking Powder Association presented in Congress in 1900 shows that at that time there was produced annually baking powders of the different types, as follows:

Tons used per annum:	Manufacturing concerns:
Alum, 50,000	544 Alum and alum-phosphate
Cream of tartar, 9,000	10
Phosphate, 300	1

The directions for the use of baking powder in general call for two heaping teaspoons to a quart of flour. This amount is unnecessary with the stronger powders, and makes a poorer instead of a better biscuit. The housewife will obtain better results if she uses the smaller proportion called for in the directions given by the manufacturer. With the stronger baking powders one heaping teaspoonful to a quart of flour is a great sufficiency. To use more than directed means to introduce an unnecessary amount of residue in the finished food.

How to Measure

Always measure the baking powder by the level teaspoonful. Scrape the straight edge of a knife across the spoon, keeping the blade pressed to the sides of the bowl. In this way you will always get the same amount.

Advantages of Baking Powder

With a properly compounded baking powder, the chemical reaction will always be the same, and any influence which it may exert upon the flavors of the finished food will always be the same. Baking powder has these two advantages over yeast: (1) The gas is given off at once upon the addition of water or in the oven during the heating; (2) and the presence of butter, lard or eggs does not hinder the chemical action.

The leavening, from whichever source, is always the result of the same gas, carbon dioxid, and in the study of baking powder we are interested in learning how this gas is produced by chemical action.

Sources of Carbon Dioxide

Carbon dioxid is found in nature combined chemically with many metals, and these combinations are known as salts of carbonic acid, or more commonly as carbonates. Those with which one is most familiar are chalk, marble and limestone, all of which are different forms of calcium carbonate. If any of these are heated to a very high temperature, carbon dioxid gas is set free and lime remains; but this very high temperature is never reached in baking. Baking soda is another carbonate with which all are familiar.

The Ingredients of Baking Powder Soda

Soda is the carbonate which is used at home for cooking purposes; it is also commonly known as saleratus, or baking soda. This is the carbonate used almost exclusively in the manufacture of baking powder and always named on the label as soda. It is sometimes referred to as the alkali of the baking powder. It is a white crystalline substance of very high purity, being as free from impurities as granulated sugar. It is manufactured from common salt through the action of acid ammonium carbonate.

The reaction is represented by the following equation:

$NaCl$	plus	NH_4HCO_3	equals	$NaHCO_3$	plus	NH_4Cl
Salt		Acid Ammonium Carbonate		Soda		Ammonium Chloride

Soda, when heated, readily gives off carbon dioxid gas, and hence may be, and often is, used in cooking without the addition of any other substance for the purpose of leavening. The heat, however, does not drive off all of the gas. The reaction which takes place is represented by the following formula:

$2NaHCO_3$	equals	Na_2CO_3	plus	H_2O	plus	CO_2
Soda		Normal sodium Carbonate		Water		Carbon Dioxid

The residue of normal sodium carbonate thus left in the bread gives it a disagreeable, alkaline taste, and also colors the bread an objectionable yellow; hence, soda by itself is unsatisfactory for use as a leavening agent.

Ammonium Carbonate

Ammonium carbonate has been sometimes used as a leavening agent. This, upon being heated, breaks up into two different gases, ammonia gas and carbon dioxid gas. Some of the ammonia gas remains in the bread when cooked; therefore, its use in baking powder has been almost entirely discontinued.

Magnesium Carbonate

Magnesium Carbonate is the only other substance at present used for the purpose of furnishing carbon dioxid gas. The heat of the oven is not sufficient in this case to cause all the gas to be set free. Magnesium carbonate is a very light powder. One pound will occupy as much space as six pounds of soda. The purpose of those who use this ingredient in the manufacture of baking powder is mainly to add to the bulk of the powder and thus make the thoughtless purchaser believe she is getting more for her money.

Other Substances Necessary

It will be seen from what has just been said, that none of these carbonates are, of themselves alone, satisfactory for baking purposes. Something else is necessary.

If one has ever dropped a little vinegar on some soda, he has noticed that a gas was set free. This is carbon dioxide gas. Vinegar contains an acid, acetic acid, and it is the action of this acid upon the soda that sets free the gas. Any soluble acid will have this same action on soda, hence, if we unite such an acid with the carbonate, soda, we have the necessary substances with which to produce carbon dioxid gas.

The Acid Substance

For the making of baking powder, both acid and carbonate, however, must be dry substances, and not liquid, like acetic acid of vinegar. The acid should also dissolve in water. There are many such dry acids, most of them organic substances. Citric acid, the principal acid contained in lemons, is one of these. Tartaric acid is another.

Beside the true acids, there are some salts which have an acid nature and which are called acid salts. Of these, calcium acid phosphate, commonly called acid phosphate, is one, and potassium acid tartrate, commonly known as cream of tartar, is another. There are some salts which are not acid salts (inasmuch as all of the hydrogen atoms of the acid have been replaced by a metal) which nevertheless act as very weak acids. The most common of these is sodium aluminum sulphate, sometimes called "Alum."

Any of these three kinds of substances, the acid, the acid salt, or the salt with acid properties, acts upon soda and sets free carbon dioxid gas. The action takes place almost as quickly as the "acid" or salt dissolves. These substances just mentioned, acid phosphate, "Alum," tartaric acid and cream of tartar, together with the soda, are the active

principles in baking powder. In addition to these there is generally a quantity of starch and sometimes dried white of egg. Soda has been studied. The other substances must now be considered.

Tartaric Acid and Cream of Tartar

Tartaric acid is manufactured from Argol, which is the sediment that separates out at the bottom of the wine vat during the fermentation. This substance is colored by the color from the grapes, and is a mixture of tartaric acid, calcium tartrate, cream of tartar and all kinds of organic impurities. This mixture is dissolved in water, precipitated with powdered chalk and calcium chloride, filtered and then the precipitated calcium tartrate is dissolved in sulphuric acid. This solution is again filtered and treated with some decolorizing agent, such as bone black or infusorial earth, and the subsequent clear, colorless solution evaporated and the tartaric acid allowed to crystallize. Cream of tartar is also obtained from the same sediment, Argol. It is decolorized by heating with animal charcoal, filtered and recrystallized.

Acid Phosphate

Calcium Acid Phosphate is prepared from the same source as is much of the "Phosphate," used at soda fountains. The bones from healthy cattle are heated in large revolving cylinders until they are thoroughly charred. In this condition the mass is black and is known as bone black, although in reality it consists of both calcium phosphate and charcoal. This substance is used to decolorize the juices of the cane in the manufacture of cane sugar. In the manufacture of phosphate it is again heated to a very high temperature whereby all charcoal is burned off and only the calcium phosphate remains. It is then further purified, concentrated, crystallized and dried to a white powder.

A more recent process is the manufacture of phosphate for food purposes from phosphate rock. This material was not formerly used on account of the great difficulty of excluding from the finished acid phosphate the harmful impurities, fluorides, always found in the rock. Bone phosphate is the better on this account and is always used by the careful manufacturer of high grade baking powder.

Calcium acid phosphate for baking powder is prepared in two degrees of fineness, powdered and granular. The granular (the acid phosphate as found in Calumet Baking Powder is of the granular type) is much more expensive but has the great advantage of making a baking powder that will keep longer than one made from powdered phosphate.

"Alum"

The so-called "Alum" used in baking powder is not the alum which is sold at the drug store by that name. The common alum of trade, which is also used as medicine, contains potassium, an element that is toxic in very small quantities, and water of crystallization; it is, in fact,

potassium aluminum sulphate, combined with water of crystallization, K AL $(SO_4)_2$ 12 (H_2O). The so-called "alum" of baking powder is a different thing and is more properly named sodium aluminum sulphate, being a mixture of sodium sulphate and aluminum sulphate, both of them harmless and non-toxic. It contains neither potassium nor water of crystallization. The term alum has been used for this article on baking powder labels at the request of some food commissioners who felt that this word would be better understood by the common people as showing in a general way the character of the substance. Unfortunately, it has had the very different effect of misleading the public into the erroneous idea that it actually is the alum of commerce and of medicine—a mistake of which certain manufacturers have not failed to take advantage in decrying baking powder containing alum.

It is prepared by mixing solutions of two sulphates, sodium sulphate and aluminum sulphate, concentrating the mixture and fusing the resulting dried mass. This leaves a mixture which for our present purposes we may designate by the formula:

Na	Al	$(SO_4)_2$
Sodium	Aluminum	Sulphate

There is no potassium in this substance at all, as there is in the common alum, and no ammonia as in the less common ammonium alum.

Starch

We also find that besides the soda and the "acid," starch is used in baking powder. This starch is corn starch of the highest grade of purity and specially prepared for food purposes.

The starch serves three purposes, two of which play an important part in keeping the baking powder from spoiling, while the third adds to the efficiency of its use.

FIRST: It separates the soda from the acid or acid acting salt and thus by mechanically separating them retards such chemical action as could be brought about by moisture. The air always contains moisture. This is very noticeable on rainy days, but it escapes attention in fair weather. Not only is carbon dioxide set free when water or milk is poured on the baking powder, but even the moisture in the air gradually causes the change. Moisture from any source thus spoils the powder.

SECOND: Starch absorbs water and thus prevents moisture from bringing the active ingredients in contact with each other. In this way it aids materially in keeping the powder from spoiling. Starch is, for these reasons, a necessary ingredient of baking powders, and most especially necessary in the case of straight phosphate baking powders, which, even when starch is present, deteriorate very rapidly.

THIRD: Starch also dilutes the strength of the baking powder, so that it may be made to produce the amount of gas desired for efficiency and for convenience in household methods of measurement.

The laws of a few States require that a baking powder shall produce at least 10% of its weight of carbon dioxid gas. Almost all baking powders are made stronger than this. The majority of those upon the market yield 12% of gas, while the best produce between 14% and 15%.

White of Eggs

There is one ingredient mentioned above, as being sometimes used in baking powder, which has not yet been discussed. That is Dried White of Eggs, sometimes called egg albumen. It is prepared by drying the white of fresh eggs at a low temperature, and then grinding to a fine powder. Fourteen pounds of whole eggs will produce about one pound of this dry powder. It dissolves easily in cold water and the viscuous, egg-white nature of this solution holds the bubbles of gas as they are set free from the baking powder. White of eggs is used by many manufacturers of baking powder. This increases the efficiency of the carbon dioxid gas evolved by a baking powder to an extent of 2.5% to 3.2% when used in strong baking powders. It is extremely beneficial in producing light biscuits when the oven temperatures are not properly controlled or when the dough has to stand for some time before baking.

The amount of dried white of egg used in baking powders is very small, being 15/100 of 1%. Even in this small proportion it has the effect above mentioned. It also makes possible a simple test whereby the freshness of baking powder may be determined, by the salesman in testing the stock upon the retailers' shelves, by the grocer himself, or by the housewife in the home. Both the increase in lightness and the possibility of the test are due to the viscuous nature of the white of eggs, whereby the bubbles of gas are imprisoned as soon as they are set free by chemical action. This test is described by one manufacturer as follows:

"First take an ordinary drinking glass holding one half pint, or in other words, the quantity that is usually known in the household as 'one cupful.' All that is needed is this empty glass, which must be dry, an ordinary teaspoon and a little water of the ordinary room temperature (not ice water nor hot water). Place two level teaspoonfuls of the powder in the dry glass to which add the same quantity (two teaspoonfuls) of water, quickly; stir rapidly for a moment (while counting five), just long enough to thoroughly moisten the powder; remove the spoon and watch the mixture rise. Note the action of the powder. It rises slowly and evenly, requiring two minutes to show the full strength. If the powder is of full strength, and you have proceeded properly the gas released will form bubbles sufficient to half fill the glass. Caution: Don't attempt to make the mixture rise by continued stirring, as whipping or beating the mixture breaks the gas bubbles that are formed and allows the gas to escape. Allow the powder to rise of its own strength."

Manufacturers make the following use of this test. Whenever complaints are made to the grocer or when goods appear to have been stored in damp places, or too near the stove, the salesman tests the baking

powder as above described and if it is found to have deteriorated, it is at once exchanged for fresh goods without cost to the retailer. Without this simple test it would be necessary to send the goods complained of to the factory for chemical analysis. As a result of such tests by the salesmen, deteriorated goods may be entirely removed from the market so that the consumer will never receive a baking powder which does not do its work perfectly. Of course, the above test cannot be made unless the white of egg is present.

The Healthfulness of the Residues

The healthfulness of these residues is discussed in Bulletin No. 103 of the United States Department of Agriculture, professional paper, entitled "Alum in Foods," this being the decision of the Referee Board after a long extended investigation. The members of this board were selected by the President of the United States because their high scientific knowledge, the eminent positions they occupy, and the complete facilities for investigation at their command, were such as to render their conclusions respect-impelling and final. The following is a quotation from the report:

"Alum, as such, is not present in food when eaten."

Properly Balanced Action

A study of the keeping qualities and of the speed of action has resulted in the production of baking powders containing a combination of two of these "acids." The most notable are those containing phosphate and "alum." The aim has been to produce a baking powder with a correctly balanced action, giving off a proper amount of gas in the cold, with a sufficiently large amount of gas that will only be given off on heating the mixture in the oven, and, at the same time, a powder that will not easily spoil. As a result of such consideration and extensive experiments, baking powders have been produced superior to any made with a single "acid" ingredient. Properly proportioned powders, of the "phosphate-alum" type, are not only the best in keeping quality, but, when they contain sufficient phosphate, have also the best balanced speed of action, and insure the housewife against the dangers either of fallen biscuits on the one hand or of biscuits, which have crusted over too quickly to obtain the desired lightness, on the other hand.

Cost of Baking Powder

The cost of any material used for a piece of work must be figured on the cost of that material for a single unit of the work to be done.

An example of the difference in cost of baking powder is the following:

"A" sells baking powder at fifty cents per pound and directs that you use two heaping teaspoonfuls to the quart of flour.

"B" sells baking powder at twenty-five cents per pound, and directs that you use two rounded teaspoonfuls to the quart of flour.

What does it cost to leaven a quart of flour with "A's" powder as compared with that of "B's"?

Answer—Four times as much.

Caution: Never use more baking powder than recommended by the manufacturer. By following directions you will get the best results.

A baking powder that gives off nearly all of its gas in the cold, as does a straight phosphate or a tartaric acid and a cream of tartar baking powder, will produce a large dough biscuit before being placed in the oven. The dough in this case is already much distended and the gluten of the flour will not hold much more gas without breaking and allowing the gas to escape. Practically all of the gas has been set free before it is placed in the oven. If placed in an oven of a low temperature, any jarring of the floor or slamming of the door of the oven is likely to cause a fallen cake. This danger applies especially to straight phosphate and to cream of tartar and tartaric acid powders.

Most of the widely advertised "pure cream of tartar" baking powders contain tartaric acid.

Self-Rising Flour

Self-rising flour is nothing more than a mixture of flour and salt with soda and an "acid" ingredient, or in other words, with ingredients such as are used in making a baking powder. This mixing is almost always done without any chemical control of the purity or strength of the ingredients or of the proportioning of the ingredients. The soda and "acid" are purchased of the manufacturers with a formula for mixing them. The formula is never changed no matter how much the purity or strength of the ingredients may vary. Such a product subjects the user thereof to every inconvenience and disappointment as to flavor and color in the finished food, such as would result from the use of the cheapest baking powder, manufactured without chemical control. Inasmuch as excessive quantities of the soda and acid are frequently added, the housewife is also preparing food containing excessive amounts of residue, when she uses self-rising flour.

Because of the large amount of water contained in flour, and the lack of protection from atmospheric moisture through the use of cloth bags as containers, the keeping qualities of the self-rising mixture are seriously impaired.

Less baking powder is required for cake making than for biscuits, muffins, etc.,—therefore self-rising flour would contain more baking powder than should be used in the making of cakes.

Carbohydrates

Marian's Bread Crumb Griddle Cakes

1 cup milk
1 cup dry bread crumbs
2 teaspoons CALUMET Baking Powder
3 tablespoons melted shortening
1 cup flour
1 or 2 eggs
1 teaspoon salt
2 teaspoons sugar

Preparation: *DO NOT SOAK THE BREAD CRUMBS.* Break the egg or eggs into a bowl or quart cup and beat, add all of the ingredients except the bread crumbs, and beat smooth with the egg beater. Then add the bread and enough water or more milk to make of desired consistency. By the addition of shortening to the batter, the greasing of the griddle is avoided, eliminating the offensive odor of burning grease.

Dainty Doughnuts

1 egg
½ cup milk
1½ teaspoons CALUMET Baking Powder
½ cup of sugar
1½ cups flour
1 tablespoon butter or cooking oil

Preparation: Cooking oil in which to fry; a wire basket with a kettle in which it fits is a great convenience.

Sift the flour and CALUMET three times. Beat the eggs well and add sugar, shortening and flour and mix.

Add enough more flour to make soft dough, only stiff enough to be handled.

With the CALUMET Baking Powder you will find that the doughnuts may all be cut and placed on a board or pans before beginning the frying. This does away with the many steps between table and range.

Kindergarten Ginger Bread

4 tablespoons sugar
4 tablespoons shortening
½ teaspoon soda
1 teaspoon ginger
1 teaspoon cinnamon
1 egg
4 tablespoons molasses
4 tablespoons milk
1 teaspoon CALUMET Baking Powder
1 cup flour

Preparation: Break the egg into a quart cup or bowl and beat for two minutes with a rotary egg beater, then add the materials, in the order named, and beat thoroughly.

Drop into well-greased gem pans or into cake pans. Bake fifteen minutes in moderate oven.

These are good either hot or cold.

This recipe makes about one dozen gems.

Boston Brown Bread

1/3 cup whole wheat or Graham flour
¼ cup New Orleans molasses
1 egg
½ teaspoon salt
½ cup seedless raisins may be added
¾ cup corn meal (yellow)
1/3 cup white flour
½ cup sour milk
½ teaspoon soda
1 teaspoon CALUMET Baking Powder.

Preparation: Beat the egg and add the molasses, milk and other ingredients. Put into well greased brown bread cans, cover each and place them in shallow pan with about one and one-half inches of water. Bake in moderate oven about one and one-half hours. This recipe will make one large loaf, or two smaller ones.

Perfect Corn Bread
(Northern)

1 cup corn meal (yellow)
3/4 cup milk
2 tablespoons melted shortening
½ teaspoon salt
½ cup white flour
1 egg
1 tablespoon sugar
1½ teaspoons CALUMET Baking Powder

Preparation: Sift the dry ingredients together. Beat the egg, stir in the milk and pour into the other ingredients. Add the melted shortening and mix thoroughly by cutting batter back and forth. Pour into baking pan, brush the top with melted shortening and bake in moderate oven twenty-five minutes.

This recipe will make six large corn meal muffins or corn bread sufficient for three or four people.

Waffles

2 cups flour
1 tablespoon sugar
1 tablespoon oil
2 eggs
1½ cups milk
½ teaspoon salt
2 teaspoons CALUMET Baking Powder

Preparation: Separate the eggs, placing the whites in a quart bowl, beat very stiff with rotary beater, then add the yolks and beat again. Then add the other materials, and mix well, using the rotary beater as it makes the batter smooth. Cook in well-greased hot waffle irons, allowing about a tablespoonful to each section of the iron.

Dust with powdered sugar and serve hot.

Colonial Bread
(Whole Wheat)

2 cups whole wheat flour
4½ teaspoons CALUMET Baking Powder
¾ cup broken walnut or pecan meats
1½ cups sweet milk
1 cup white flour
1 teaspoon salt
2 tablespoons sugar

Preparation: Sift the dry materials, add the milk and mix with a

Carbohydrates

knife. Add the nut meats. Place in well-greased bread pans. Let stand fifteen minutes. Bake in moderate oven one hour.

When in the oven about one-half hour, turn the pan. Currants, raisins or dates may be substituted for nut meats.

Buttermilk Biscuit

2 cups bread flour
1 teaspoon salt
½ teaspoon soda
3 tablespoons shortening
1 cup buttermilk
1 teaspoon CALUMET Baking Powder

Preparation: Sift the flour with the baking powder, soda and salt. Mix in shortening with a fork or spatula. If the buttermilk is not very sour use proportionately less soda. Stir in the milk and do not touch the dough with the hands until turned onto the floured board. Roll it about one-half inch thick and cut with a medium size biscuit cutter.

Brush the tops with melted shortening and bake in moderate oven about twelve to fifteen minutes.

This recipe will make twenty-four small or eighteen medium biscuits.

Dainty Muffins

3 cups flour
1 teaspoon salt
4 tablespoons melted shortening
1 egg
4 teaspoons CALUMET Baking Powder
2 tablespoons sugar
1½ cups milk

Preparation: Sift the dry materials, add the milk, into which the egg beaten slightly is added, then the melted shortening. Mix thoroughly and quickly, cutting the dough back and forth. Drop into deep gem pans. Brush the tops with melted shortening and bake twenty-five minutes. Half of this recipe may be dropped as usual into the gem pans and set away in a cool place to bake the next morning or for a later meal.

This recipe makes one dozen muffins.

Raisins may be added and in season one cup of blueberries will add greatly to the muffins.

Bran Bread

The following recipe for a health bread was prescribed by a physician for a patient of sedentary habit. As a choice between bran and drugs, the bran is perhaps the better of the two.

3 cups whole wheat flour
3 tablespoons New Orleans molasses
1 teaspoon soda
Buttermilk to make soft dough
1 cup bran
Pinch of salt
1 teaspoon CALUMET Baking Powder

Preparation: Stir all of the ingredients together. Bake about forty-five minutes in a moderately hot oven. This is usually baked in a Buster

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Brown tin or in a tea or coffee can, that will leave little of the surface exposed to crust over.

I would prefer to make this entirely of unsifted graham flour, as the amount of bran would be about the same.

Twin Biscuit

2 cups flour
3 teaspoons CALUMET Baking Powder
¾ cup milk, more or less
1 teaspoon salt
4 tablespoons lard or butterine

Preparation: Sift the flour, CALUMET and salt three or four times. Work in the shortening with a spatula or fork. Then make a soft dough with the milk.

Roll out half an inch thick. Brush generously with some melted shortening. Fold over and run the rolling pin over the dough or pat lightly together. Cut out with a fluted cooky cutter.

Brush tops with milk.

Bake ten minutes in medium hot oven. These may be prepared some hours before baking, placed in the pans and kept in cool place until ready to take places at the table when they may be put into the oven.

In this way the biscuit may be served piping hot after the first course is disposed of.

Twin biscuit are just the thing for individual strawberry short cakes, also for serving with chicken fricassee, family style.

Dutch Apple Bread

(American Style)

2 cups flour
1 egg
3 teaspoons CALUMET Baking Powder
5 tart apples
Cinnamon and sugar
1 cup milk
1 teaspoon salt
2 tablespoons sugar
1 heaping tablespoon butter or lard

Preparation: Sift together all of the dry ingredients. Beat the egg and add the milk. Work the shortening into the flour. Make a soft dough with the egg and milk.

Roll out one-half inch thick and put into pan. Brush the top with shortening. Core, peel and slice the apples, cut slices into halves and press them overlapping into the top of the dough.

Sprinkle with cinnamon and sugar and dot with butter. Bake about twenty-five minutes in moderate oven.

Carbohydrates

Strawberry Shortcake

2 cups flour
3 teaspoons CALUMET Baking Powder
1 teaspoon salt
¾ cup milk (more or less)
4 tablespoons lard or butterine

Preparation: Sift the flour, CALUMET and salt three or four times. Work in the shortening with a spatula or fork. Then make a soft dough with the milk.

Roll out half of the dough about a quarter of an inch thick. Fit it to a large pie pan. Brush over the top with melted shortening. Roll out the second half the same and place on the first half.

Bake fifteen minutes in moderate oven.

Slip the shortcake when baked onto a large chop plate or platter. With a long knife turn the upper half onto the pan. Butter and heap with sweetened fruit, then place upper half over the fruit and sprinkle with powdered sugar.

Scotch Scones

2 cups flour
1 cup sour cream or buttermilk
1 teaspoon salt
2 tablespoons lard
½ cup dried currants
½ teaspoon soda
2 teaspoons CALUMET Baking Powder

Preparation: Sift the flour, salt, soda and baking powder. Work in the lard with a fork. Make a soft dough with the sour cream and add the cleaned currants.

Divide into four or six parts and form in large biscuit shapes. Press a knife handle each way across each scone.

Brush with a mixture of egg yolk and water. Dust with powdered sugar and bake about twenty minutes in moderate oven.

Maple Rolls

2 cups flour
1 teaspoon salt
½ pound maple sugar
1 cup milk
3 tablespoons shortening
3 teaspoons CALUMET Baking Powder

Preparation: Sift the flour, baking powder and salt. Work in the shortening with a fork or spatula and make a dough with the milk. Roll out as square as possible and sprinkle with the maple sugar. Brush the further end with water and roll the pastry from you in a firm roll. Cut off in half-inch slices, placed in greased and floured pan, brush with melted shortening and bake fifteen minutes in moderate oven.

To prevent the syrup formed by the sugar from cooking onto the pan, the recipe for pastry may be increased one-third. Roll out one-third of the pastry very thin and cut rounds from it to cover bottom of pan. Then place each slice of the roll on a round. This looks fussy, but conserves all of the goodness as well as time and energy in cleaning baking pan.

All measures level unless otherwise specified.

Carbohydrates

Calumet Dumplings

(To Steam)

1 cup sifted flour
½ teaspoon salt
½ cup sweet milk
1 teaspoon CALUMET Baking Powder

Preparation: Sift the flour, salt and CALUMET very thoroughly. Add the milk a little at a time to make the dough the consistency of biscuit dough. These may be steamed over hot water or dropped into the soup or stew as preferred.

Take the dough up on a teaspoon which has been dipped in cold water.

Do not allow the soup to boil rapidly after dropping in the dumplings as the agitation of the boiling would cause them to separate. Keep the kettle covered while cooking the dumplings. When cooked remove at once to hot tureen.

Lesson Number Three

Carbohydrates

Cakes and Their Process

The housewife who can serve to her family and guests dainty and rich cakes is the envy of her less fortunate sisters, and perhaps her near friend will exclaim, "You always do have such luck with your cakes."

Luck may enter into the work once in a while, and sometimes, too, a clever guess may be made as to the materials, but guesswork spells failure more often than success.

Neither does the art of cake making consist in the possession of numerous recipes. It depends upon certain fundamental rules and a certain knowledge of the application of heat. Some people grasp these things intuitively, while others have to give more thought to the subject.

For instance, eggs and their manipulation are one of the main stumbling blocks, although each detail of cake making is important. Eggs contain albumen, which begins to coagulate at about 134 degrees Fahr., while flour has to be subjected to a much greater heat in order to cook the starch. Therefore it will readily be understood that all cakes must rise to their full extent before browning over the top or applying heat enough to cook the flour.

A quickly effervescing baking powder is also to be avoided in the making of cakes. If a quickly effervescing baking powder is used, it should be held back until the cake is ready for the pan, when it should be beaten in thoroughly and the batter immediately put into the pan for baking. More important still is the proportion of baking powder.

Accuracy in measurement of all materials is absolutely necessary. Every kitchen should be provided with one or two of the glass or tin measuring cups and with them this accuracy can be obtained. Other tools necessary for cake making are the egg whip for the white of the egg and a rotary beater for the yolks, a wooden spoon with slotted bowl for the creaming of butter and sugar and mixing. The large size ordinary milk crock is superior to any other mixing bowl.

For the baking of cakes the aluminum pans with the tubes are a little better than those without. Do not grease the sides of the cake pans. Grease the bottom and flour the sides and bottom. A paper is necessary for fruit loaf cakes or for any cake baked in a long sheet. Do not grease either paper or pan, unless the paper does not entirely cover the bottom of the pan. Then grease the uncovered bottom and corners.

Prepare the pans first, then prepare and measure all the materials before beginning the mixing. The whites and yolks of the eggs should be beaten separately unless the recipe specifically directs otherwise. If the butter is cold and hard, warm the sugar slightly or add a couple of tablespoons of hot water to the sugar. Never melt the butter. Cream the butter and sugar thoroughly, until white and creamy.

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In making measurements, level off the cup or spoon with a knife. The proper proportion of baking powder is one level teaspoon for each level cup of flour. Cakes are never as delicious made with bread flour as with winter wheat or pastry flour. All cake recipes presuppose that winter wheat flour is to be used. Therefore, if bread flour is used, the measurement must be one-fifth less as bread flour takes up more moisture, or substitute for one-third of the flour an equal amount of corn starch or rice starch.

HIGH ALTITUDES—Almost all cake recipes are compounded for low altitude and the amount or proportion of flour depends on the altitude. For instance, a cake recipe calling for two and one-half cups of flour in ordinary altitudes would in Butte or Denver, or any point in the mountains, require three cups, about one-fifth, more flour.

Do not use butter for greasing the pans, as there is the same objection to it as in all other forms of cooking, it burns too easily. Use vegetable oil or lard.

Begin the baking of cakes in a low oven. As soon as the cake batter has risen to its full extent, increase the heat and when well set and lightly browned, reduce the heat if not quite baked.

The texture of a cake containing many eggs may be toughened by too hot an oven, just the same as a puff omelet is spoiled by over cooking.

If sour milk is used, neutralize its acid with the smallest bit of soda and use about half as much baking powder as with sweet milk.

If fruit or nuts sink to the bottom of the cake, it shows that the batter is too thin.

An accurate unit of measure could not be established for unsifted flour, as its density differs. That is why we always say sift the flour once before measuring. Then add the baking powder and sift two or three times to insure the perfect mixing of the two materials.

When cakes are properly mixed, the materials are in right proportion and an efficient baking powder is used, there is no danger of the usual activity around the house disturbing the cake or causing it to fall. When many egg whites are required a few drops of lemon juice added to the whites when beaten foamy will be an advantage, as the acid has the property of keeping the air cells intact. This is particularly desirable in the making of meringues.

A cake is ready to take from the oven when it will spring back after a slight pressure of the finger.

Cakes baked in shallow or layer cake pans require about one-fifth more flour than when baked in loaf pans. A corresponding proportion of baking powder should also be used.

Before the advent of baking powder, cakes were made without leavening in some instances, such as fruit cakes and pound cakes, but the habit of the people is different from that of sixty years ago; we now

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demand that bread and cake mixtures be leavened in order that the digestive process be not taxed by the use of heavy cakes and breads.

It is therefore advisable to add baking powder and soda to some of the old fashioned fruit cake recipes.

Use of soda should be restricted to the amount necessary to neutralize the acid of the milk or molasses. Too little carbon dioxide would be thus generated to leaven the amount of flour used for such mixtures, therefore it is necessary to supply the carbon dioxide in the form of baking powder in the proportion of half a level teaspoon to each cup of flour, when soda is used with the acid of molasses or sour milk.

Adjusting Oven: The tendency of many ovens is to accumulate too great heat in the upper part. It is sometimes necessary to place a shallow pan or kettle cover on the upper rack directly over the cake.

The appearance while baking, is a guide to regulating the heat. The cake should look raw and bubbly over the top until just as high as it is going to be, then increase the heat slightly. The last ten minutes of baking, the heat is usually decreased.

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One Egg Cake

1 egg
¼ cup butter
½ cup milk
3 drops flavoring extract
1 2/3 cups sifted flour
½ cup sugar
1½ teaspoons CALUMET Baking Powder

Preparation: Sift the flour once before measuring and four times after adding the baking powder.

Cream the butter and sugar until white and fluffy. Break the egg without separating into the creamed butter and sugar and beat well.

Then add the milk, flour and extract and beat until smooth. This amount will make two small layers, one small loaf or one dozen drop cakes. Bake in moderate oven about thirty minutes.

All measures level unless otherwise specified.

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Snow Cake

2 egg whites
¼ cup butter
½ cup milk
3 drops extract
1½ cups sifted pastry flour
½ cup sugar
1½ teaspoons CALUMET Baking Powder

Preparation: Sift the flour and baking powder four times. Cream butter and sugar. Beat the egg whites stiff and add them to the butter and sugar. Add the milk, flour and extract and beat until smooth.

This will make two small layers or one small loaf.

Hot Water Sponge Cake

1½ cups flour
1 cup sugar
1½ teaspoons CALUMET Baking Powder
½ cup hot water
3 eggs
3 drops flavoring extract or grated rind of orange

Preparation: Sift the flour and baking powder four or five times. Separate the eggs, beat the yolks until thick and lemon colored. Whip the whites until stiff, then add the sugar and whip a moment more. Add the yolks and whip again.

Sift in the flour, add extract.

Pour the hot water quickly around the bowl and as quickly whip all ingredients together. Pour immediately into greased and floured pans.

May be baked in layers and put together with whipped cream or fruit or berry meringue.

This will make one medium loaf or three small layers.

Fisher Velvet Cake

2 eggs
1/3 cup milk
1/3 cup butter
1 1/3 teaspoons CALUMET Baking Powder
1 1/3 cups flour
2/3 cup sugar
2 tablespoons water
3 drops lemon extract
3 drops vanilla extract

Preparation: Sift the flour once before measuring. Measure into the sifter, add CALUMET and sift three times; cream the butter and sugar until frothy; beat the egg yolks until thick and lemon colored, then beat them well into the creamed butter and sugar; whip the whites of the eggs until stiff, then whip into the mixture; pour in the milk and water, sift in flour, add the extract and beat all until smooth.

Bake in small loaf pan forty-five minutes, allowing the mixture to rise as high as it will before browning over the top.

If baked in shallow pan or in layer pans, one-third cup of flour should be added.

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Bride's Cake
(White Delicate Cake)

Whites of 6 eggs
3 cups flour
¾ cup milk
3 teaspoons CALUMET Baking Powder
1½ cups sugar
½ cup butter
½ teaspoon extract

Preparation: First prepare the pan by greasing the bottom and flouring. Measure the flour which has been sifted once, then add the baking powder and sift four times.

Cream the butter and sugar, beat the whites of the eggs until very stiff. Add the beaten eggs to the creamed butter and sugar and mix lightly, then add milk, flour and extract and beat vigorously.

Bake in moderate oven, not less than forty-five minutes.

Devil's Food

For custard—
2 teaspoons cinnamon
2 teaspoons cloves
1 teaspoon mace
6 tablespoons sugar
2 teaspoons allspice
1 teaspoon nutmeg
2 squares chocolate
6 tablespoons milk

For cake—
2½ cups sifted flour
¾ cup milk
2½ teaspoons CALUMET Baking Powder
4 eggs
1¼ cups sugar, granulated
2/3 cup butter

Preparation: To make the custard put the broken chocolate into a small bowl over hot water, add the sugar, spices and milk. Stir until smooth when set aside to cool while mixing the cake.

Sift the flour once before measuring. Measure into the sifter, add the CALUMET and sift three times. Cream the butter and sugar until frothy. Beat the yolks of the eggs until thick and lemon colored, then beat into the creamed butter and sugar. Whip the egg whites stiff and add lightly to the mixture, pour in the milk, sift in the flour and mix until smooth. Then beat the custard into the batter until thoroughly mixed.

This cake baked in a loaf pan must bake about forty to forty-five minutes and heat must be regulated so that cake will rise as high as it will before browning over the top.

Baked in layer pans it requires one-half cup more of flour and one-half level teaspoon of CALUMET. When baked this cake is very smooth and rich. If baked in layers and put together with meringue icing in which chopped nuts, raisins and figs are mixed it is an exceedingly rich cake.

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Eggless Cookies

1½ cups sugar
1½ cups buttermilk
½ teaspoon soda
Pinch of salt if lard is used
¾ cup lard or butter
4 cups flour
2 teaspoons CALUMET Baking Powder

Preparation: Sift the flour, baking powder and soda three times. Work in the lard as for biscuit, add the sugar and then the buttermilk. A little more flour may be required to make dough that will roll.

These cookies may be flavored with spices or extract if desired or finished with a raisin or nut. This recipe makes about five dozen cookies.

English Rocks

2 cups flour
¾ cup sugar
2 teaspoons CALUMET Baking Powder
1 cup currants
6 tablespoons shortening
Pinch of salt
3 eggs

Preparation: Sift the flour and CALUMET four times. Work in the shortening as for biscuit. Add the sugar and then the well-beaten eggs. Add currants last.

Lift rough lumps of dough with a fork onto well-greased pans. They should look rough as possible. Bake twenty minutes in moderate oven.

Plain Icing

This is the simplest form of icing and is made by beating up very thoroughly confectioners' sugar dissolved with hot water or hot milk. Allowing it to stand an hour before spreading it, improves the flavor.

Orange Icing

1 egg white ½ orange juice and rind 2½ cups confectioners' sugar

Preparation: Break the white of an egg into a bowl, sift in the sugar; grate only the extreme yellow of the orange rind and squeeze in the juice and beat all together until thick enough to spread.

Meringue Icing

½ cup water
1½ cups granulated sugar
3 egg whites
2 tablespoons granulated sugar
½ teaspoon CALUMET Baking Powder

Preparation: Make a syrup of the first portion of sugar and the water. Cook until it will form a crystal rope that will crack when dropped from a spoon into ice water.

Whip two egg whites until stiff, then whip in the 2 tablespoons of sugar and immediately whip in the CALUMET Baking Powder.

When the syrup is ready pour slowly over the meringue, whipping up lightly. When stiff and cooling drop in the extra unbeaten white and continue beating till right consistency to spread.

If this icing is made on a bright sunny day all of the extra egg white will be required, but in damp heavy weather about half only may be required. This is sufficient for two large cakes.

All measures level unless otherwise specified.

Lesson Number Four

Carbohydrates

Yeast Breads

YEAST, Explanatory:

In the development of yeast SUGAR is the SPUR, SALT the BRIDLE.

Necessary conditions for the propagation of the yeast germ are warmth and moisture—product is $CO_2 + C_2H_6O$, carbon dioxid and alcohol.

The yeast plant thrives on sugar and converted starch which is in the flour. As it developes the process produces carbon dioxid gas, alcohol and a lactic acid—later on another change produces acetic fermentation due to bacteria and known as souring. A tiny bit of soda may be used to overcome this tendency. But the formation of acetic acid must be regarded as an accident due to carelessness. However, the tiny bit of soda will do no harm.

Diseases of Bread. Care must be taken to insure against the development of foreign bacteria and moulds by a sanitary cleanliness of vessels and coverings with which doughs are surrounded. The conditions which will spoil jellies and preserves and cause them to mold will produce dangerous conditions in breads and flours. Such conditions are induced by dark and damp storage places.

When once the bread utensils are infected only a thorough overhauling will eradicate the fungus.

The common disease from fungus growth develops first in the center of the loaf. The growth permeating the entire loaf, causing a stringy, pasty condition.

COMPRESSED YEAST is skimmed from fermented rye and pressed. Each cake of compressed yeast is estimated to contain fifty billion yeast cells. Compressed yeast is frequently adulterated by the addition of starch or flour.

Present day conditions make it unnecessary for the housewife to use home-made yeast as the compressed yeast is as rapid as the best home-made soft yeast, and far more dependable.

The dry yeasts found in the market are scientifically prepared and as economical as those made at home.

One of the frequent faults in bread making is the use of too much yeast.

In making rolls, rusks or buns in which eggs and shortening are used, start the dough with a sponge.

The grain will be finer and the bread whiter if well kneaded, due to the aeration or bringing in of oxygen to the dough. The sponge or dough should be set away in a warm (75 degrees Fahr.) moist place until leavened to double its bulk.

In the absence of the proof-box as used by bakers for bread raising, a good substitute may be had in the oven of the gas range by placing

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a dish of hot water under the lower shelf or rack of the oven; the oven is not to be heated or lighted. A cupboard is very easily arranged with open or slatted shelves for this purpose where no gas range is in use.

A great many housewives now make use of the fireless cookers for setting the sponge and dough to rise, but for pans of bread or rolls there is nothing quite equal to the proofing cupboard, as it insures against drafts and does away with the covering of the pans.

A large crock or jar is to be preferred for the setting of sponges or doughs as the stoneware is not susceptible to varying temperature.

If fresh mashed potatoes are not at hand or convenient, one-half cup flour, scalded, may be used. In either case the cooked starch supplies the proper food and conditions to promote the rapid development of the yeast plant.

Make this the basis of all yeast doughs, whether recipes call for it or not. Less yeast is required and a much better bread or roll is the result.

Knead yeast dough until it is full of small bubbles, discernible by blisters over the surface of the dough.

Set to rise in warm steamy atmosphere until doubled in bulk. Roll dough should not be mixed as stiff as bread dough.

Sponges must not be allowed to stand too long.

The sponge is ready to mix when bubbles gather on the surface and break occasionally.

White Bread

(With Compressed Yeast)

3 quarts flour (warmed and sifted)
1 pint boiling water
1 tablespoon salt
1 heaping tablespoon lard or butterine
Pinch of soda
1 pint milk
1 cake yeast dissolved in ¼ cup water
2 tablespoons sugar

Preparation: Pour the water into the milk and add the sugar and one-third of the flour. By the time the flour is well beaten in the temperature will be right for the dissolved yeast. Add it and beat well, set in warm place for half an hour, then add the remainder of the flour with the soda, shortening and salt. Knead stiff and set away till doubled in bulk.

It may be kneaded once more before forming into loaves. There is a little more satisfaction in individual loaves rather than in several loaves baked in one pan.

This recipe makes four or five loaves.

If one cup of flour is scalded and added to the sponge the bread will be ready for the oven in less time. Mashed potato has the same effect.

Carbohydrates

Roll Dough

2½ cups water or milk, or both	6 cups flour
¾ cup sugar	½ cup shortening
2 eggs	1 cake yeast
1 tablespoon salt	2 mashed potatoes or ½ cup flour scalded

Preparation: First make a sponge with the potatoes or scalded flour and the sugar, dissolved yeast and enough of the flour to make a stiff batter. If compressed yeast is used the sponge will be ready in half an hour.

Add to the sponge the egg whites and one yolk well beaten, together with the melted shortening, salt and the balance of the flour. Knead well about five minutes, return to bowl, brush top with shortening, cover and set in warm, steamy place until double in bulk.

The dough may be worked down again without taking from bowl, or it may then be made into desired form.

The extra egg yolk is reserved to mix with one-quarter cup of water or milk to brush the tops of the rolls before putting them in the baking oven.

Of flour not rich in gluten more than six cups may be required but care must be taken to have the roll dough softer than for bread.

Shamrocks

Use recipe and method for roll dough as given above. Mold into balls of dough slightly larger than walnuts, allowing three of these to each well-greased gem pan.

Brush the palms with melted shortening and deftly roll each ball of dough between the palms, dropping into the gem pans. Let them rise in warm steamy place, and before putting in the oven brush with a mixture of egg yolk and water. Bake in moderate oven twenty minutes.

Upon taking from the oven brush with melted shortening.

Apfel-Kuchen

(Apple Coffee Bread)

For Apfel-Kuchen use recipe and method for roll dough.

Roll the dough about one-half inch thick, place in pans, brush plentifully with butter and sprinkle with sugar. Core, peel and cut into slices apples that are easily cooked tender. Cut the slices in halves and lay them closely overlapping over the dough. Sprinkle again with sugar and cinnamon.

When light, bake in moderate oven.

If soft winter wheat flour is used more will be required.

Carbohydrates

Norwegian Rye Bread

1 cake yeast
2 cups Graham flour
1 tablespoon sugar
3 medium boiled and mashed potatoes
2 cups rye flour
1 cup molasses
1 tablespoon salt

Preparation: Sift the flours, salt and sugar together. Pour and beat in well as much hot water as the flour will take up, making a stiff batter. Add the mashed potatoes and molasses; when this is luke warm add the softened yeast. Let stand over night.

In the morning add one cup of milk or water and enough white flour to make it right consistency.

Let stand till double in bulk. Shape into loaves; let rise and then bake in moderate oven one and a quarter hours.

Salt-Rising Bread

Explanatory: The leavening for salt-rising bread is established by a process of fermentation which is set up in the flour and water or flour and milk. Bacteria plays an important part in this process, and the yeast plants of the air or wild yeast find the batter a good medium for development.

It has been established, too, that in a surgically clean room it is almost impossible to produce the necessary ferment. The same batter placed in a room far from clean will foam up in a short time.

Salt-rising bread requires more heat while in the process of fermentation and a much longer time to bake than yeast breads.

Method: Stir two tablespoons of corn meal into a half pint of water that has been heated to 130 degrees Fahr. Add one-half teaspoon of salt and mix well. Make this in a tall pitcher; cover with a dish and surround with water at about 160 degrees Fahr. Keep over night in a warm place.

Then warm one quart of milk and to it add one teaspoon of salt and sufficient warm flour to make a heavy batter. Add the emptyings and beat five minutes. Cover and stand in a warm place for about two hours. Then add flour to make a very soft dough. Knead till smooth and elastic. Divide into four loaves. Place each in individual loaf pan; cover with a towel; keep in warm place. When light bake one hour in moderate oven.

Lesson Number Five

Proteins

Milk

Milk contains all of the food principles but they are not in the right proportion to make it a perfect food for an adult.

Skim milk is whole milk from which the fat has been removed. It may usually be bought for half the price of whole milk.

Buttermilk is the milk left after the butter fat has been removed from the cream by churning. Commercial buttermilk is made by adding certain lactic acid bacteria to whole or skimmed milk.

Certified milk is milk which is certified to be pure, clean milk, to contain comparatively few bacteria and none of these to be disease producing. Certified milk sells for about twice as much as ordinary milk.

Pasteurized milk is milk heated in a sterile container to 165 degrees Fahr. for 15 minutes or to a little lower temperature for a longer time.

Scalded milk is milk heated in a double boiler until bubbles appear around the edge, about 185 degrees Fahr.

Eggs

Eggs are a protein food. Usually they are easily and thoroughly digested. For this reason eggs are often prescribed for those who need nourishing foods.

Eggs lack carbohydrate, so we eat them with toast, rice or potatoes. They are rich in mineral salts.

Eggs are much more easily digested when cooked at a low temperature, 160 to 180 degrees Fahr.

Keep eggs in a cool, dry place. The shell is very porous and water evaporates through it easily; air rushes in to take its place and causes decomposition of the egg.

On account of its lack of flavor, a raw egg does not cause the digestive juices to flow and is not very easily digested.

A soft cooked egg digests very quickly.

A medium cooked egg is harder to digest than a raw, soft cooked or hard cooked egg. A hard cooked egg, when cooked at a proper temperature, is mealy and about as easily digested as a soft cooked egg.

Boiled Eggs

Method No. 1: Place eggs in a quantity of cold water; put over the fire and allow to come to a boil. If soft egg is desired, remove at once. If the white is desired well cooked, with yolk soft, allow to stand in boiling water one-half minute.

Proteins

Method No. 2: Place eggs in rapidly boiling water, two quarts at least; remove from fire and allow eggs to remain uncovered from eight to ten minutes, time depending on how much cooking is desired.

Method No. 3: Place eggs in rapidly boiling water, allowing to continue boiling. For soft cooked eggs remove promptly at three and a half minutes.

The four-minute egg insures no uncooked white around the yolk.

This method, however, is the least desirable. If eggs are overlooked for a moment too long, drop them into cold running water and the cooking will be arrested.

Explanatory: The albumen of egg coagulates or cooks at 130 degrees Fahr. Water boils at 212 degrees Fahr.; hence eggs cooked too rapidly or exposed to too great heat are rendered tough and indigestible.

BUTTERMILK is of about the same food value as milk and has important dietetic qualities, containing lactic acid. Buttermilk can be retained and digested by invalids or persons suffering from stomach trouble when fresh milk is rejected, as fresh milk will form a curd or cheese in the stomach when taken down in quantities. To avoid distress and receive most benefit as a food, milk should be taken by the spoon. Physicians who make a specialty of children's dietary sometimes prescribe a modified buttermilk to the exclusion of fresh milk.

For Infant Feeding: Explanatory: The use of buttermilk purchased from dairies seems distasteful to many where certified regulations are not in operation, and there are occasions when it is impossible to secure any supply of buttermilk. To provide against such contingency, lacto tablets can be purchased at the druggist's with instructions for converting sweet skim milk into buttermilk. For infant feeding it is desirable to eliminate the butter-fat.

The source of buttermilk does not alter the necessity for churning it in a small churn, as the casein must be broken or separated. In the absence of the churn a good rotary egg beater may be used. It is best to get a small churn and churn the milk soured at home, as in that way you are sure of its freshness and cleanliness.

Method: The first formula or basis is:

1 tablespoon flour put in oven until it is a golden brown, which turns the starch to dextrin.

1 tablespoon granulated sugar.

1 quart buttermilk.

PASTEURIZATION:

Cook the buttermilk directly over the fire, stirring constantly to prevent it curdling. Make a paste of the browned flour and sugar and stir into the hot buttermilk and boil from five to ten minutes, still stirring.

Fried Eggs

For two eggs select a skillet not larger than a tea saucer.

Heat the skillet and place drippings or butter in it.

Proteins

Break the eggs into a saucer and slip into the skillet. Season with salt and pepper and cover. Do not have too much heat under the skillet.

Poached Eggs

Have water in a skillet salted and heated to just boiling point. Break the eggs into a dish and then slip them into the water, moving the pan where the water will remain hot but not boil. This method will produce an egg of jelly-like consistency.

A muffin ring may first be placed in the water, one for each egg, or the aluminum egg poachers may be used. They are very convenient and practical.

Puff Omelet

4 eggs
4 tablespoons warm water
Salt and pepper to season
1 tablespoon butter or oleomargarine
Skillet eight or nine inches in diameter for this quantity

Preparation: Separate the eggs. Beat the yolks until stiff and lemon colored.

Whip the white very stiff. Add seasoning and water to the yolks. Add the whites and pour into the pan in which the tablespoon of butter has been melted.

Place pan over the fire until well set around the edges. Then remove to oven or place under broiler until top is dry and center cooked. This takes but a few minutes, and care must be taken not to overcook, as too much heat will cause the omelet to shrink.

Holding pan in the left hand, fold over away from the handle of the pan and turn onto a warm platter. Sprinkle with parsley and serve.

Custard (Cooking School)

2 cups milk
1 tablespoon flour
Nutmeg
2 teaspoons sugar
4 tablespoons sugar
3 egg yolks
2 egg whites
2 tablespoons cold water

Preparation: Place the milk in double boiler. Mix the flour and sugar. Separate eggs; beat the yolks with two tablespoons cold water.

Add the mixed flour and sugar to the hot milk; allow to cook a few moments, then add the egg yolks.

If flavoring is desired, add a few drops.

As soon as the custard coats the spoon it is time to remove it from the hot water.

When ready to serve the custard, beat the whites of the eggs stiff, add the two teaspoons of sugar. Prepare a dish of water which is hot enough to give off steam but not boiling rapidly. Drop spoonfuls of the meringue into this water; when glossed over and cooked take up,

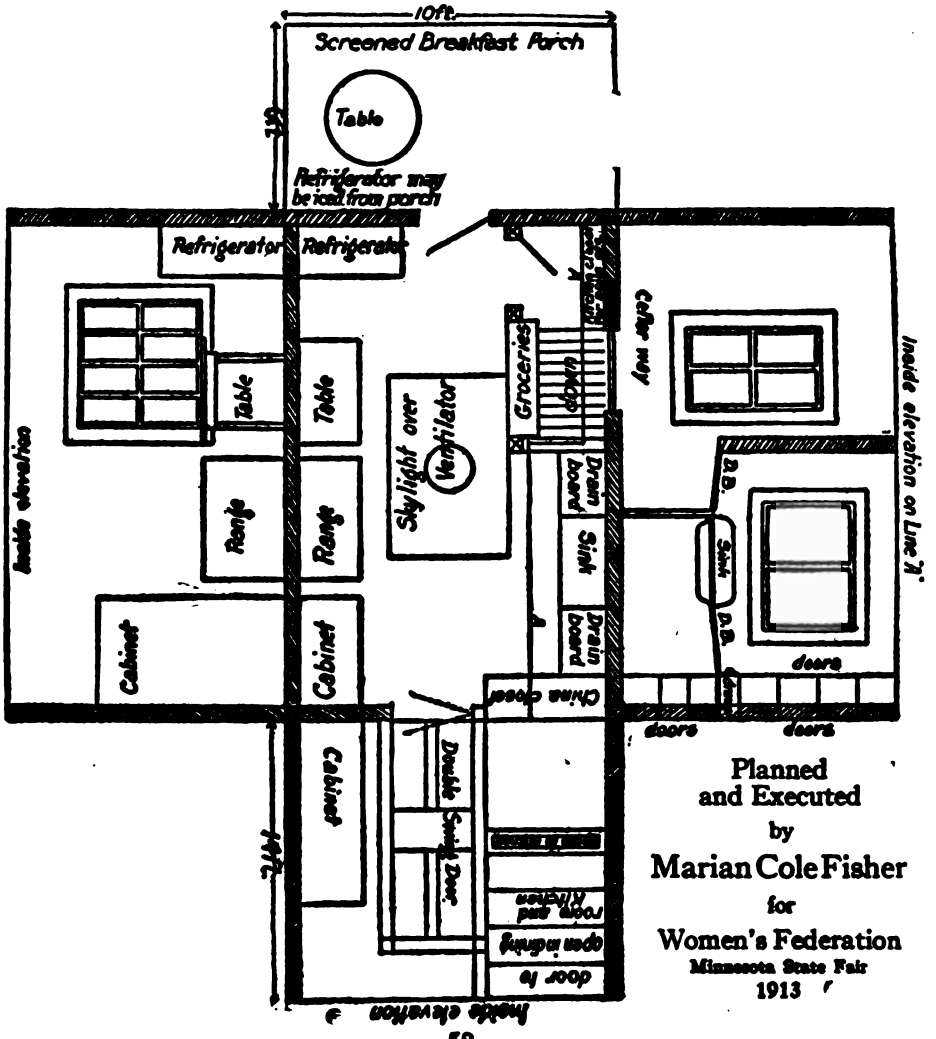
each meringue and place on top of the custard and sprinkle with nutmeg. Be careful that the meringues are not overcooked or they will coagulate and fall.

Baked Custard, Country Style

2 cups milk	5 tablespoons sugar
3 eggs	Grating of nutmeg

Preparation: Heat the milk. Beat the eggs and add the sugar with 2 tablespoons cold water. Stir rapidly into the heated milk.

Turn into custard cups and sprinkle with nutmeg. Place these cups in a dish surrounded with an inch and a half of water and put into moderate oven until well set.



Lesson Number Six

Proteins

Cheese

Cheese has nearly double the amount of protein (muscle builder), weight for weight, that beef has and should be placed in the regular dietary as a staple rather than as an auxiliary food.

SKIM MILK CHEESE is about 1/3 protein, 1/3 fat and 1/3 water.

RICH CREAM CHEESE has a larger percent of both fat and protein than steak, eggs, milk or bread.

The harder breads and crackers are recommended as proper complement to induce mastication.

Cheese dishes require the green vegetable with rice, potatoes or Italian paste to balance the meal, with fruits as a dessert.

Cottage Cheese

(Schmierkase)

Pour as much boiling water into the thick sour milk as you have milk, stirring as it is poured. Let it stand five minutes, then pour into a drain bag. If only a small quantity is being made, put a square of cheese cloth into a strainer and pour in the curds and whey. When drained, gather up the edges of the cheese cloth, tie with a cord and allow to hang over night.

Kase Kuchen

(Cheese Pie)

3 eggs
Grated rind and juice of 1 lemon
1 cup sugar
1 heaping teaspoon flour, or bread crumbs
2 cups cheese

Preparation: Mix the sugar and flour, reserve two egg whites, beat up the remaining egg white and the yolks, then put all of the materials together into the double cooker. This can be turned into the uncooked pastry shell and baked until the pastry is cooked and the filling set. The reserved whites of the eggs may be beaten with two tablespoons sugar and used as a meringue.

Proteins

Welsh Rarebit, with Ale and Wine

½ pound of good cream cheese
1 cup of ale
Salt, paprika and mustard to taste
¼ loaf white bread
½ cup of port wine
Rounds of toast

Preparation: Put the cheese in the upper part of chafing dish, over the hot water pan.

When melted add the bread, which has been crumbed, then add the ale and then the wine.

Season with the salt, paprika and mustard.

Serve on rounds of toasted bread.

Welsh Rarebit, with Beer

½ pound cream cheese
1 pint beer
1 teaspoon salt
½ loaf bread, crumbed
½ teaspoon mustard
2 teaspoons butter

Preparation: Place butter in the upper part of chafing dish or rice boiler. Break the cheese into the vessel, then pour in the beer. When quite warm add the bread crumbs and seasoning. When all combined and heated through, serve on slices of bread which have been toasted on one side.

"Bunny"

2 eggs
1/3 cup milk
1 tablespoon butter
½ teaspoon mustard
2/3 cup tomatoes
1 cup chopped cheese
2 tablespoons flour
½ teaspoon salt

Preparation: Beat the eggs and add to the milk. Heat the butter and blend with flour. Add the milk. When cooked creamy add the tomatoes. Then add the cheese with seasonings.

Serve as soon as cheese is melted, on bread toasted on one side.

Toasted Cheese

Take a shallow stone pie plate or an old ironstone china plate. Spread over the plate thin slices of cream cheese. Sprinkle with salt and paprika, if desired.

Place under broiler fire and allow to toast without turning.

Serve hot on toasted bread.

The cheese prepared this way makes a delicious and hearty sandwich.

Lesson Number Seven

Proteins

Fish

Fish belongs to the group of foods rich in protein or nitrogeneous matter.

The muscle building matter in fish, such as white fish, cod, haddock and halibut, is about the same as in beef or mutton. Phosphates are more abundant in fish than in meats; there is also much more waste and the edible portion contains more water. Dark fleshed fish, as salmon, catfish, sturgeon and tuna, have the fat distributed through the body, and while more difficult of digestion, furnish more food value than the white fleshed fish—cod, haddock, etc.

HOW TO SELECT FISH: Fish to be eatable must be fresh from the water or handled carefully in cold storage. Stale fish is a dangerous food. Fresh fish have bright scales and eyes, with gills that are pink. The flesh must be firm and free from unpleasant odor.

Beware of the fish markets where channel cat and horned pout are to be found skinned, soaking in water and ice. To use a simile—how much egg albumen would you have remaining were you to break an egg into a quantity of water?—the albumen or protein would be dissipated or dispersed in the water. The same effect would be produced on the soluble proteids by soaking lean meat or fish in an abundance of water.

HOW TO PREPARE FISH: Fish that have been out of the water long and dried over should be dipped in water a moment to loosen the scales.

Make an incision on each side and the length of the fins, deep enough to draw the fins entirely out, leaving no small bones to embarrass the diner. Many fish like white fish, blue fish, pike, pickerel and Lake Superior trout have a layer of blubber or fat and a row of small bones that extend from the back fin to the head. In making the incision beside the fin, extend it to the head and remove the fat and the bones. In cooking some of the smaller fish, especially when broiling, the head and tail are not removed. In that case make the incision beside each fin, but do not draw out. Catfish, horned pout and fish without scales are often skinned. This is not necessary if the fish are dipped in very warm water and then scraped and scrubbed.

HOW TO COOK FISH: It is well to bear in mind that the flesh of fish is largely composed of the same ingredients as meat, though in different proportions. Too much heat or too prolonged cooking render it tough and unpalatable. Fish require much the same methods in preparation as meat. The structure, however, is much more delicate and so also is the flavor. The flavor of fish is often destroyed by unskillful methods in cooking and serving.

Proteins

TO STEAM FISH is better than to boil it.

TO BRAISE FRESH FISH that is sold in slices, such as salmon, halibut, cod, etc., is much the better method of cooking; it conserves the nutriment and improves the flavor, and with certain accompaniments and seasoning is a tasty method of serving. To braise fish slices, surround them in a shallow casserole or sauce pan with a little sliced or canned tomato, sliced onion, green or red pepper, with a sprinkle of bread crumbs and seasoning of salt and pepper. Finish, if desired, with a few slices of bacon laid over the top. Time required, about thirty minutes.

TO FRY FISH: For family service would advise frying fish in shallow fat or oil in a skillet requiring only a few tablespoons, rather than in the kettle of deep fat or oil.

Fish slices and all skinned fish, such as channel cat, blue cat, horned pout and eels, should all be dipped in beaten egg or batter, then in bread crumbs or flour. When the fish is brown on both sides cover, reduce the heat and allow to finish slowly. Season while cooking.

The fresh water fish, such as lake trout and those belonging to the white fish family, as blue fish, cat, pike, crappy, bass and sun fish, are the choice fish to select for frying. However, the three latter are very choice fish to broil.

TO BROIL: Broiling is a popular method of cooking sun fish, blue gill, all varieties of the bass family, perch, pike and similar fish, and requires the same preparation as for frying. Instead of the skillet, prepare the broiler, having it heated for three to five minutes before placing the fish on it. Do not have the heat as great as for meat. When browned on both sides, reduce the heat and finish slowly. Season while cooking.

BAKING FISH requires the same preparation, except that the fins are not generally removed, but the incisions are made, enabling a less difficult service.

STUFFING for BAKED FISH is ordinarily a combination of bread crumbs, mashed potato, with a seasoning of onions or garlic, green pepper, salt and white pepper. The bread crumbs may be moistened with a few spoonsful of tomato juice instead of water.

PLANKED FISH service is suitable for any fish weighing three pounds or over.

After the housewife has once mastered the planking of a fish it will be found a more agreeable method than frying, as it requires less attention just when there are so many details of the dinner calling for quick attention.

Fish for planking are usually shad, white fish, blue fish, pike, Lake Superior trout, and the larger of the cat family, of which the channel cat is the choicest variety. The blue cat follows.

Proteins

To prepare for planking, split the fish and remove all of the bones, after having prepared according to instructions for frying. The cat fish may be prepared as previously instructed.

For family use the heavy white ironstone china platter may be used instead of the plank.

The fish plank is an oval-shaped board about one inch thick, made from dry-kilned birch or other suitable wood. A deep groove follows the edge. The plank is heated as hot as can be without scorching. The fish, laid open, is placed skin side down. If the fish under preparation is not a fat fish, baste with a little melted butter, sprinkle with salt and pepper. Place under the broiler fire or on the top shelf of a coal range oven. After the surface is slightly browned, reduce the heat. A four-pound fish requires about thirty minutes.

For the most efficient method of planking, the writer recommends the heavy platter of ironstone china or white enameled ware, as it furnishes the dish on which to serve the fish, keeping it and the accompanying potatoes warm throughout the dinner.

To plank fish on a platter, proceed as with plank of wood. Heat the platter quite hot, placing the fish skin side down. Neither platter nor plank require greasing.

GRATED CHEESE makes a nice garnish for planked fish if sprinkled over the fish about five minutes before removing from the fire.

POTATO ROSES, SARATOGA POTATOES or RICED POTATOES may be used as a border around the fish when ready to serve.

Fish Chowder

FISH CHOWDER is a way of serving fish free from bones.

Method: Place half a pound of salt pork, diced, in a deep skillet. Allow to fry out. Slice one onion into the fat and simmer while preparing half a dozen small potatoes by peeling and dicing. Drop them into the fat and stir around until ready to brown over. Then place two pounds of flaked and boned fish on the surface of the potatoes; cover and allow to simmer until potatoes are tender, when fish will be found cooked. Season with salt and pepper; add about three-quarters of a cup of rich milk and allow to come to boil.

GREEN or RED PEPPER, cut up with the onion, will improve the dish.

FISH CHOWDER, served as a soup, must have quantities of water or milk, with requisite seasoning added to the chowder.

FISH SAUCES are very simple, usually a combination of butter, water, flour and lemon juice, with a variety of seasonings.

Fish Accompaniments

Baked salmon is considered one of the most elegant of dinner fish and is rich enough in itself to furnish the heavy course.

Care must be exercised to serve appropriate dishes with it, such as entrees, sauces, vegetables and desserts, to make the dinner complete.

Contrary to a heavy meat dinner, a rich dessert is desirable with a fish dinner.

The entrees, however, must not be sweet.

Certain vegetables associate themselves with a fish course.

A baked salmon brought to the table with one-half of the platter banked with fresh, crisp watercress is a feast for the epicurean eye, as well as for the palate. The cress not only garnishes the dish, but sprigs of it should be served with the dish.

Water cress, lending a zest to many dishes, is particularly appropriate with salmon.

The entrees that can be served are many, including stuffed green peppers, French or cream pea patties, celery or macaroni croquettes, various vegetables au gratin with cheese, combinations of egg, mushrooms in many forms and the Italian pastes.

The sauces are not so many but more important, as no fish is ever served without a sauce.

Baked salmon requires one of the following sauces: Lemon butter sauce, sauce Bechamel, sauce Genoise, Hollandaise, sauce Tartare, anchovy butter, Spanish Bernaise, piquant or horse-radish sauce.

The principal vegetables to accompany a fish dinner are peas, string or butter beans, cauliflower, artichokes, fried green peppers or fried green tomatoes with Irish potatoes in some form.

Salads of cucumbers lead, with combination, tomato, cold slaw, pea and cheese salads following.

Very finely shredded cabbage with green peppers is good.

The dessert usually takes the form of a rich pastry, such as lemon, orange, rhubarb or pineapple pie.

Puddings are not acceptable with a fish dinner.

Fish not so rich as salmon are cooked with a larding of bacon or salt pork, or a sprinkle of cheese. The larding is accomplished by cutting gashes in the fish and laying in long slices of pork or bacon.

The soup to precede the fish is never of a meat stock, or boullion. It is usually a cream of some vegetable or fish, more often of a vegetable.

The preferred stuffing for a fish is of bread with plenty of onion and green peppers minced fine.

Grated cheese sprinkled over a baking fish about fifteen minutes before removing from the oven is a great addition, giving a piquancy much desired.

Lesson Number Eight

Proteins

Meats

PROTEIN AS FOUND IN MEAT: With meat prices soaring, the thrifty housewife looks about for new ways to serve cheaper cuts. This is well, for the cheaper cuts, be it known, are as rich in nutritive value as the expensive cuts. The housewife among the poorer classes of other countries seems to come naturally by the principles of the conservation of the full value of food products, just as the earnest thinking women of this country are coming to realize the significance of this problem.

Although a common article of diet, little is known about the selection, cooking and nutritive value of the different cuts of meat.

As a rule, round steak is cut too thin, thereby losing much of the juice contained in it.

Lean of meat supplies a valuable form of protein or muscle building.

The structure of meat should be well understood in order to make clear the science of properly conserving the protein and gaining full food value for expenditure, and full flavor to make the dish palatable and tasty.

The protein is found in large proportion in the muscular part of the animal. As a rule, meat must be cut across the grain or muscle. This peculiarity of structure makes the loss of protein more rapid if the meat is not carefully seared to prevent its loss.

A gentle heat is necessary to break down and soften the tissue, but the searing process must first be performed, then the heat reduced until cooking is finished. This is an inexorable rule to be followed, except when making beef tea or soups.

Meat intended for BEEF TEA and SOUPS requires just the opposite treatment to extract the juice.

The protein of meat is similar in its property to the white of egg, and when subjected to intense heat coagulates or hardens, making it indigestible as well as unpalatable. This coagulation begins at about 130 degrees Fahr., therefore, in stewing or cooking meat in water, learn to maintain the cooking below the boiling or bubbling point of water, which in this altitude is 212 degrees.

Meat should be *simmered* not *boiled.*

To the housewife who uses a gas range, the use of the small simmering burner for that purpose, with the flame turned low, is recommended. For the owner of a wood or coal range, it is a very easy matter to keep the kettle at the right point of heat on the back of the range.

Proteins

To prepare a POT ROAST, the cook formerly put the meat into a kettle of hot drippings, turning constantly until seared entirely over the surface. The principle was right, but not everyone cares to stand over the sputtering grease. A little easier way is to place meat in a vessel and pour over it boiling water in which a large spoonful of salt has boiled, as this increases the heat of the water.

BOILING SALTED WATER will have a greater heat than boiling unsalted water.

OVEN ROASTS may be treated in the same way, then placed in hot oven for twenty minutes, later reducing heat and allowing to cook at the lower temperature.

Hungarian Goulash (Gulyas)

(A choice dish of mutton)

2 pounds mutton (cheaper cuts)
2 medium onions
½ cup drippings or margarine
Salt and paprika to season
Parsley to garnish
3 medium potatoes
1 green pepper
1 cup rich milk or evaporated milk reduced slightly

Preparation: Place the drippings in a deep stew kettle, aluminum preferred; slice the onions and green pepper into it and cook briskly for ten minutes. Then cut the meat into pieces about the size of an egg and cook until well seared over, about fifteen minutes.

Add half a cup of hot water; cover and cook until tender over simmering burner or low fire, adding water in small quantities as necessary.

When meat is tender, place the potatoes, which have been diced, on top of the meat; cover again and steam until tender, but not too soft.

Then add the milk, salt and a generous seasoning of the paprika. Serve garnished with minced parsley.

The main point to remember is to keep barely enough water on the meat so when finally the milk is added there is no water remaining. That is the secret of the choice flavor.

Beef or veal may be used, taking the cheaper cuts. But the Hungarians use mutton in making this dish, for which they are famous.

Mexican Round Steak

Select a thick steak and [illegible] with a sharp knife, working in all the flour possible. Put into hot skillet with half cup of drippings, turning until well seared. Pour over it one cup of water and a covering of tomatoes, a couple of medium onions minced fine, with a minced green pepper. Cook for about one hour. Season with salt and pepper; cover with a liberal grating of cheese and slightly brown. This method conserves all of the meat juices and provides a delicious gravy.

Proteins

Proper Method of Broiling a Steak
(Under Gas Broiler)

Order your steak two inches thick.

Heat the broiler by lighting the burner five minutes before putting the steak on the rack. Prepare the steak by cutting away all superfluous fat, which has a tendency to scorch and fill the pan with drippings that in turn may catch fire.

Place the steak as close to the flame as possible and sear over quickly, turning two or three times during the first eight or ten minutes, then reduce the heat and place the steak a little further away from the flame.

In turning the steak be careful not to pierce the lean part of the meat with the fork, as that will release the juice and make the meat drier.

Steak two inches thick requires about 30 minutes.

Steak an inch thick requires from 8-15 minutes to broil. Do not hurry the process after the first seven or eight minutes, unless your steak is very thin, in which case it will be finished in that time.

When the steak to be broiled is not large enough to cover a considerable part of the broiler, it is a good plan to place a shallow biscuit or pie pan directly under the rack where the meat is placed, in this way retaining the juice and drippings in one place and lessening the liability of the drippings catching fire, at the same time conserving the juices for serving with the steak.

Do not attempt to broil a round steak. Its texture is such that the heat draws out the juice before it is seared. The steaks to broil are: sirloin, tenderloin, porterhouse and club.

From an exceptionally prime beef a nice two inch thick cut from either the shoulder or chuck or from the rump is suitable for broiling.

TO BOIL A HAM: Whether or not a ham should be soaked over night is simply a matter of taste. Saltpetre is not as much used as formerly in preserving ham and the soaking over night may now be dispensed with.

Cleanse the ham properly, then pour over it a gallon or so of boiling water. Cover and place over simmering burner of the gas range or on the back of the wood or coal range and cook until tender without allowing to boil at a gallop.

The ham, or any other meat can cook at a temperature of 175 degrees Fahr.

If a fireless cooker is convenient, allow the kettle to remain on the fire fifteen minutes before placing in the cooker. If hot radiators are part of the cooker equipment, the fifteen minutes on the range are not necessary.

Proteins

TO ROAST A HAM: Remove it from the fireless cooker, place in a roaster or dripping pan; take off all the skin and surplus fat; cover with fine bread crumbs, sprinkle with brown sugar, cinnamon and spices, and stick cloves over the surface. Place in a moderate oven about thirty to forty-five minutes.

Cider Sauce

(To serve with Baked Ham)

1 pint cider
1 tablespoon capers
3 tablespoons ham fat from kettle
½ cup chopped gherkins
3 tablespoons flour
½ teaspoon curry powder
1 teaspoon whole allspice

Preparation: Place the ham fat in the skillet; add curry powder; allow to heat thoroughly. Then add the flour, following it with the hot cider and allspice. Cook until creamy.

In the absence of cider, hot water to which three tablespoons of vinegar and two finely grated apples have been added, may be substituted.

Meat Loaf

1 pound uncooked beef
1 pound uncooked mutton
3 cups bread crumbs
1 pound fresh lean pork
1 cup milk
2 eggs
Seasoning to taste, add onions or garlic, if desired

Preparation: Put the meats through the food chopper, mix with the other materials, beating the eggs slightly.

Bake thirty minutes in moderate oven.

Care should be taken not to overcook meat loaf as it makes it dry.

The most acceptable seasoning is a combination of sage, marjoram, sweet basil, thyme and summer savory.

Chili Con Carne

(Pepper with Meat)

2 pounds round or lean chuck steak or mutton
2 pimientoes or large Chili peppers
2 cups rice or spaghetti (cooked)
½ cup margarine or beef drippings
½ can tomatoes
1 large onion
Garlic, salt and pepper or Creole seasoning

Preparation: Trim meat free from fat and gristle; cut into cubes size of an egg; roll them in flour. Place a stew pan over the fire and put into it the drippings and onion and when hot turn in the meat and brown, then the tomatoes and sliced pimientoes and cook until meat is tender. Make a border of the cooked rice or spaghetti either on a chop plate or platter. Serve the chili con carne in this border. Garnish by placing half slices of lemon and rings of pimientoes, alternately, around the border of rice.

Proteins

Mutton Curry

3 cups of mutton from the neck cut into inch cubes
1 stalk celery
Minced parsley
1 teaspoon curry powder
Boiled rice
2 medium onions, minced
1 quart boiling water
2 sprigs mint
3 tablespoons each margarine and flour
Salt and pepper

Preparation: Put the meat over a gentle fire to stew or simmer in the quart of water. When almost tender add the minced onion and half a dozen leaves of the mint. Remove when tender and strain the liquor.

Melt the margarine, add the curry powder, let saute about three minutes; add the flour and the strained liquor, then the seasoning.

Cook until creamy, pour it over the meat or add the meat to it. Serve either in a border or around a mound of cooked rice. The mound is much to be preferred, as in this way the rice does not chill and the meat and curry sauce is poured around it. Sprinkle over all the remaining minced mint and the minced parsley

Braised Soup Meat

Select some of the cheaper cuts of meat with the bone included; for instance, rib end of beef or oxtail.

The soup meat, if properly treated for soup making, is at its best rather tasteless for hashes, etc.

Try this method of braising the soup meat and serve at the same meal at which the soup is served.

Half an hour before dinner take the pieces of meat from the kettle, drain, roll in cracker meal, which has been seasoned with salt, paprika and pepper, place in a small dripping pan, surround with half a can of tomatoes, a small onion sliced and a green pepper minced. Place in a hot oven, basting frequently. To make the dinner complete, serve baked potatoes. The meat left over can be used for hash or meat pie, and has a good flavor.

Soup Stock of Fresh Meat

There is no economy in mere bones for soup stock. Select meaty bones. Cover with cold water, and allow to stand half an hour or so.

Put over a slow fire or the simmering burner and by no means permit the kettle to boil. A fireless cooker with the heated radiator is a sure method of getting proper results.

If beef is used, half a day is none too long for cooking. Veal, mutton or oxtail requires less time.

When all the flavor is extracted from the meat, strain and season as desired.

Proteins

Soup Stock of Left Overs

The wise housewife has a stock kettle. Into this go the clean scraps, bones and trimmings, the broken-up carcass of roast fowl and the bones left on the platter after serving broiled steak.

Exceeding care must be taken to have these materials at once covered with cold water and brought nearly to the boiling point and allowed to simmer till no more good remains.

Salt and perhaps the herb seasoning may be added while simmering this, but do not attempt to add onion or vegetable seasoning unless to serve at once as the vegetable flavors being volatile are lost or deteriorated by standing.

Veal Soup Piquant

2 quarts veal stock
2 cups diced cold veal
1 lemon, seasoning of salt and paprika
1 tablespoon flour (heaping)
1 tablespoon margarine (heaping)
Sprig of sweet basil

Preparation: Season the stock with the salt and sweet basil, pour over the creamed margarine and flour. Boil up. Cut the lemon in thin slices, place in the tureen and pour over it the stock. Serve at once.

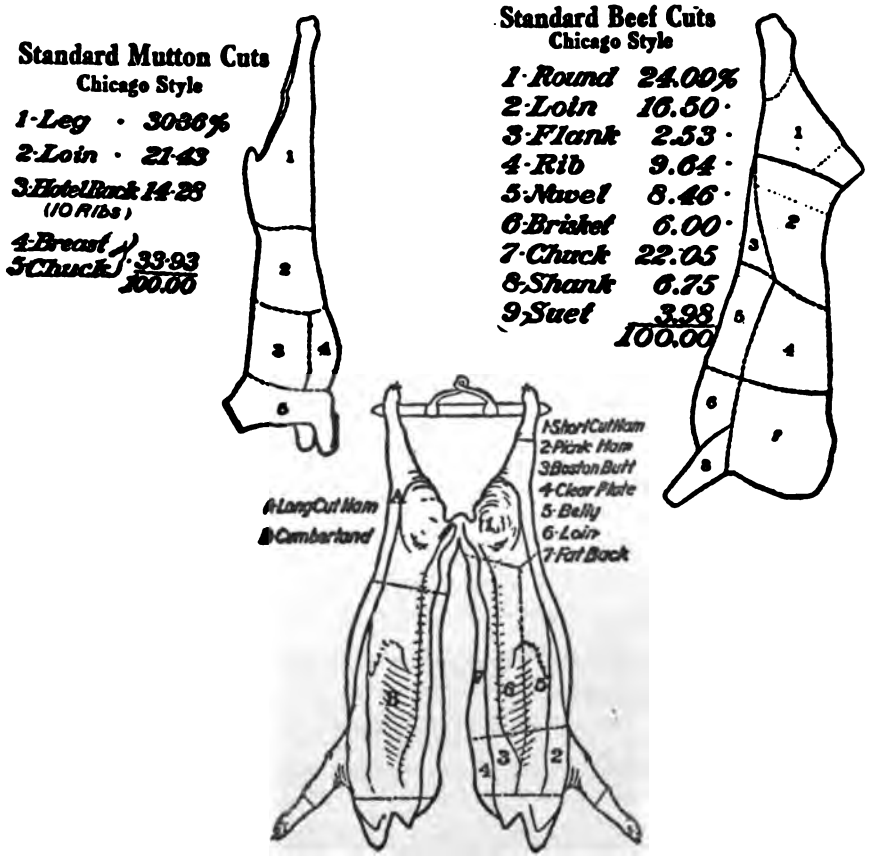
TO PREPARE A LARGE FOWL or TURKEY for ROASTING: When the fowl is trussed and dressed ready for the roasting pan, sear well. Then place in the roaster in hot oven for about ten minutes. After that cover and reduce the heat.

TO PREPARE FOWL for DRESSING: It should be split down the back, opened up and all of the viscera removed without making the other openings. When prepared and cleaned, place breast side down and fill with the dressing. Have ready some short steel skewers, such as the butcher provides, and a length of wrapping twine. Put the skewers through the edges of the back, take the center of the twine and, beginning at the neck, lace the twine around the skewers. This method will be found much superior to the old way of closing the openings with a darning needle and twine.

Bread Dressing for Fowl

Coarse bread crumbs
Medium Spanish onion or 3 green onions
Green pepper
Seasoning of herbs
Salt and pepper

Preparation: *DO NOT SOAK* the bread crumbs. Chop the onions and peppers very fine. Mix with the bread crumbs, adding seasoning. Sprinkle with cold water, amount depending upon how dry the bread crumbs are, but not enough to make soggy.



Lesson Number Nine

Carbohydrates

Vegetables

Explanatory: Vegetables as a rule should be cooked in uncovered vessels.

RICE and MACARONI should be cooked in rapidly boiling water, not that they will cook more quickly, but the action of the water separates the particles.

All vegetables should go over the fire in boiling water. To green vegetables add a pinch of salt.

ROOTS and TUBERS are better cooked in unsalted water as the cellulose or woody fiber is toughened by the salt.

It is well known that vegetables containing protein, as PEAS, LENTILS and BEANS, are not so readily softened in hard water, so a pinch of bicarbonate of soda is added to soften the water and soak the vegetables more quickly. Do not add soda to green vegetables.

If green vegetables become wilted, restore them by placing in cold water. Salt water tends to toughen the cellulose.

Vegetables with a strong odor, such as cabbage, onions and cauliflower should be cooked in boiling water, uncovered.

Classification of Vegetables

I. FOOD VALUE

1. Vegetables containing starch, sugar and protein: Potatoes, carrots, beets, peas, beans, etc.

2. Vegetables used for mineral salts, acids and water: Lettuce, spinach, tomatoes, etc.

3. Vegetables used mainly for bulk: Cabbage, radishes, cucumbers, etc.

II. FLAVOR

1. Strong flavored vegetables: Onion, turnips, cabbage, cauliflower, etc.

2. Mild flavored vegetables: Peas, carrots, spinach, mushrooms, etc.

Lesson Number Ten

Carbohydrates.

Vegetables (Starchy)

POTATOES, Explanatory: Cooking potatoes without their jackets, results in a great loss of mineral matter, as the mineral matter is near the skin. Therefore pare very thin and put the potatoes in boiling water to cook. If a seasoning of salt is desired, add salt ten minutes before potatoes are tender.

In ordinary altitudes potatoes require from twenty-five to thirty-five minutes to boil, but in the higher altitudes more time is required on account of rapid evaporation.

Mashed Potatoes

6 potatoes
1 tablespoon salt
2 tablespoons butter
Hot milk to cream

Preparation: Pare and put potatoes over to cook in boiling water. When tender drain them carefully. Put one cup of milk to scald. Add butter and salt to the potatoes and mash with wire potato masher. Add boiling milk, a little at a time until the potatoes have taken up all they will absorb. Serve in hot tureen. Sprinkle with minced parsley.

Riced Potatoes

This is an excellent variation from plain boiled or from mashed potatoes. Cook same as for mashed potatoes. When ready dip the ricer in boiling water, fill with potatoes and press through ricer into hot tureen, shake seasoning of salt and pepper over them, dot with bits of butter and serve hot. Very nice when pressed directly into individual side dishes or shallow ramekins which have been heated.

Potatoes O'Brien

Dice carefully six medium cold boiled potatoes in half inch cubes. Dredge very lightly with flour, season with salt and pepper and let stand while mincing two green bell peppers, and one small onion. Put three tablespoons of oil or drippings into a frying pan, throw in the minced onion and peppers, saute, but do not brown. Then put in the potatoes and allow to cook through.

Turn onto a hot platter in a mound and sprinkle with finely minced parsley. In using green peppers always discard the seeds.

Carbohydrates

Potatoes Au Gratin

3 cups diced boiled potatoes
2 cups cream sauce
½ cup grated cheese
Salt and pepper or paprika to season

Preparation: Have the cream sauce hot, add cheese and be sure cheese is melted before adding potatoes and seasoning.

Put in baking dish and sprinkle with grated cheese. Place dish in an oven for about 20 minutes.

Potato Souffle

1 cup mashed or riced potatoes
2 tablespoons cream
1 egg
Salt to season

Preparation: Beat the yolk of egg with the cream and salt and mix into the potatoes, beating well.

Whip up the white of the egg very stiff and whip into the potatoes.

Put into buttered baking pan, bake in moderate oven about 20 minutes. Must be eaten while hot.

Lesson Number Eleven

Carbohydrates

Rice

Explanatory: In rice producing countries rice is used in the daily foods as we use Irish Potatoes, and Wheat Breads. It is eaten alone or with a little dried fish, other foods to balance the ration. In China, Japan and Java, Soy-bean sauce or Soy-bean Cheese or similar products are eaten with rice, and supply the necessary complement of protein in the daily diet.

Rice is valuable as a starchy food, but in boiling parts with a considerable per cent of both starch and mineral matter, therefore, the water in which rice is cooked, holds food value, and if rice is cooked in more water that can be absorbed, the remaining liquor or water should be retained for soups or gravies.

For nutritive purposes we would recommend the cooking of rice in just sufficient water to be absorbed, i. e., four times as much water as measure of rice.

EFFECT OF POLISHING RICE: Farmers' Bulletin No. 417 has this to say, "Using the grain without polishing is economical and furnishes a rice of much higher food value. In the process of polishing nearly all fats are removed." We are to understand from that, that the unpolished rice is the more wholesome and nutritive.

Boiled Rice, No. 1

1 cup unpolished rice
1 teaspoon salt
4 cups boiling water
1 teaspoon butter

Preparation: Place boiling water in the upper kettle of rice boiler, with salt and butter, add the cleaned rice and keep rapidly boiling for fifteen to twenty minutes. When the rice has absorbed most of the water this kettle can be set into the water vessel and allowed to complete the cooking uncovered in the double boiler.

If an ordinary sauce pan is used instead of the double cooker, an asbestos mat may be placed under the kettle to complete the cooking.

Boiled Rice, No. 2

½ cup rice
1 teaspoon salt
4 cups boiling water
1 teaspoon butter

Preparation: Put the water into a much larger kettle than is necessary for amount of materials. Add the salt and butter, and when boiling sprinkle in the cleaned rice. Boil at a gallop thirty minutes. Pour into a strainer or sieve, dash a cup of clear water over the rice and set in a warm oven to dry. The water in which the rice was cooked may be preserved for soups or broth.

Carbohydrates

Spanish Rice

Rice	Oil or butter
Salt	Clear stock or water

Preparation: Place sauce pan over fire with a level tablespoon of oil or butter. Sprinkle into it the cleaned uncooked rice and cook over a low flame for five minutes. Add a dash of salt and the stock and cook twenty minutes briskly.

Note: If onions, curry powder or green peppers are to be a part of this dish, they are first sauted in the oil and then rice is added.

Italian Pastes

VEGETABLES, Starchy and Italian Pastes

MACARONI, Explanatory: Macaroni or any of the Italian pastes with cheese or with cream sauce should be served in place of a meat dish instead of with a meat dish.

Such a dish contains sufficient nutriment to make a complete ration served with a green vegetable or salad.

A few years ago the best grades were imported but it is now conceded that American made pastes of standard brands excel all others in food value and sanitary manufacture.

The pastes intended for cooking in soups are first dropped into boiling salted water for twenty minutes and boiled rapidly, using a large quantity of water. The pastes are then drained and put into soup kettle with the soup to finish. For all other dishes the pastes must be dropped into salted boiling water and cooked at a rapid boil thirty minutes. Then put into a collander and cold water run through to blanche and separate.

EGG NOODLES (Manufactured): The manufactured egg noodles are treated the same as Macaroni and Spaghetti and if made by a reliable firm will be found to be a trifle richer in nutrition than the other pastes as egg enter into their manufacture. The egg noodles are perhaps a nicer addition to soups than any of the other pastes. The best of the manufactured noodles are superior to those made at home and make a better appearing dish.

Hominy

HOMINY, Explanatory: We have two sorts of Hominy, one almost the entire grain with the hull taken off, the other the grain ground after the hull has been removed. The latter is known as hominy grits. Both kinds should be soaked in cold water over night, then cooked slowly. The markets supply the soaked hominy.

Dried hominy doubles in bulk when soaked.

Carbohydrates

To Cook Dry Hominy

1 cup dry hominy
1 quart water
½ teaspoon salt

Preparation: Soak the hominy over night in water in which it is to be cooked. Add the salt and cook slowly about four hours. Cook in fireless cooker if possible.

Hominy may be served plain, in place of potatoes, or with a little butter, salt, pepper or cream.

Hominy with Tomatoes Au Gratin

Cooked hominy
Bread crumbs
Seasoning of salt and paprika
Canned tomatoes
Grated cheese

Preparation: Brush a baking dish with melted shortening, put a layer of hominy, then tomatoes and sprinkle of bread crumbs and cheese. Make three layers, having cheese and bread crumbs finish top.

Place in moderate oven for thirty minutes. Serve hot or cold. This dish is extremely nourishing.

Brush a baking dish with melted shortening and line plentifully with bread crumbs. Put in an inch deep layer of cold cooked hominy, then seasoning of salt and paprika or chili powder and a grating of cheese. Cover with bread crumbs. Make two such layers.

Before adding the top layer of crumbs pour over tomato juice and then for the top layer have a goodly quantity of bread crumbs and grated cheese. Set the dish in another one of hot water and bake one-half hour.

Hominy Fritters

2 eggs
½ cup milk
1 teaspoon salt
½ cup flour
1 cup cooked hominy
1 teaspoon CALUMET Baking Powder

Preparation: Break the two egg whites into a bowl and beat very stiff, drop in the yolks and beat a moment more. Then add flour, salt, milk and CALUMET. Lastly stir in the hominy. Give these slightly more time to bake than griddle cakes. Serve hot with maple syrup, or with fried chicken. These fritters may be fried in deep fat or oil.

Grits Blocks

They may be prepared in the same manner as hominy, put in a mold to cool, cut into strips, cover with beaten egg, and then cracker meal. Fry in deep fat.

Lesson Number Twelve

Legumes

Vegetables Containing Nitrogen and Starch

Explanatory: The legumes are peas, beans, lentils and peanuts. They are rich in nitrogen and are exploited by vegetarians to take the place of meat in the dietary. Legumes furnish a hearty food and, supplemented by fats and other forms of starch than those which they contain, supply an energy making diet.

Legumin is digested and absorbed more slowly than other forms of protein, such as found in the casein of milk or albumin of eggs, etc., therefore, not suitable for constant diet of persons of sedentary habits. They are properly muscle and tissue builders when the system or digestive organs will assimilate them.

The protein of beans and peas is of such a nature that it is easily toughened by hard water—it is therefore desirable to overcome this tendency by using a little soda. The better way to introduce the soda is to place 1 level teaspoon in the water in which the beans are soaked over night, pouring off the water in the morning.

Baked Beans with Tomatoes

2 cups tomatoes
½ pound bacon ends or ham fat from boiled ham
1 pimiento
2 cups navy beans
½ teaspoon soda
1 small onion, grated

Preparation: Wash and cleanse the beans, and soak over night in water to much more than cover, dissolving the soda in the water. In the morning put the beans with the bacon ends to boil in fresh water that will cover at all times during cooking. The beans will require about one hour boiling, but watch carefully and when you can blow upon two or three beans and see the skin curl away or crack, it is time to put them in the bean pot to bake.

Place the grated onion in the pot, pour in half of the beans, then the bacon and balance of the beans. Add the tomatoes to the liquor with seasoning of salt and pepper with a few spoonfuls of molasses if desired, and fill the bean pot. The beans require several hours to bake.

If you are the happy possessor of a fireless cooker you may put the beans to soak in the morning and allow to bake the following night in the cooker.

Stewed Lentils

Wash half a pint of lentils, cover with cold water, and soak over night. Next morning drain, cover with fresh water, add a pinch of soda, and cook slowly one hour or until tender. Drain, return to the kettle, add a tablespoon of butter, a teaspoon of salt and a saltspoon of pepper. Shake for a moment until thoroughly hot and serve.

Lesson Number Thirteen

Vegetables, Green and Succulent

Explanatory: The green or so-called succulent vegetables should be served at least once a day to serve as ballast and to excite the peristaltic movement of the intestine.

These vegetables are useful for their natural salts, which salts are easily lost in cooking, therefore in cooking such vegetables, if full benefit is desired from their use they should be cooked in very little water.

SPINACH: This should be freed from sand and grit in quantities of water. Then placed to cook in covered vessel with no more water than clings to the leaves. Place the vessel where it will heat slowly and finally simmer. Then remove the cover. The liquor formed will most of it be taken up. That remaining may be used for soup or with the left-over spinach by the addition of some cream sauce and more water.

While spinach is more often served as a vegetable, it is frequently used for salads, being first cooked then chilled, chopped and molded. It supplies salad material, extremely wholesome and palatable.

GREEN PEPPERS: Green peppers add an important item to salad materials. They may be minced or cut into rings for salad, or they may be dropped into boiling water for a few moments until the skin can be peeled from them, then dropped into cold water, cut into small pieces, drenched with French dressing and served.

ASPARAGUS: This contains a substance known as asparagin, which has a decided action upon the kidneys, and while it is popularly supposed to be beneficial, it is not known with any certainty just what its merits or demerits are.

In preparing asparagus it is well to use a soft vegetable brush and go over each stalk separately to remove the grit which accumulates around the tips as it pushes its way above ground. The scales should be removed from the stalk.

Salad Plants

Explanatory: The salad plants are classed as ideal additions to the dietary, supplying as they do, natural mineral salts and volatile oils.

Salad plants are usually much better and more appropriately dressed with a French dressing, or in some cases with a whipped cream dressing, rather than the heavier cooked or mayonnaise dressing.

Salad plants are kept fresh and become crisp by folding in wet towel and keeping in cool place or near ice. If freshly pulled they should be allowed to remain in wet towel about one hour before serving.

CHICORY is a common plant resembling the bleached endive, and with a much stronger flavor. It is a common winter salad plant, and often preferred to lettuce. After blanching and crisping in ice water, it is usually served with a French dressing.

It is the root of this plant that is cut up, dried, roasted and marketed as a substitute for coffee.

Chicory is bleached the same as celery, by tying the tops together and covering with sand.

Chicory or Succory, as it is sometimes known, is at its best in the fall and often replaces the garden grown lettuce as a succulent green for salads and garnishes.

LETTUCE in season all the year is one of our most common and universal salad greens.

Its principal use is in salads, but sometimes it is cooked and served like spinach. The hothouse and winter lettuce is more delicate in flavor than that grown out of doors. It is wholesome, cooling and palatable.

It is too delicate to serve with cooked or mayonnaise dressing, and wilts quickly when mixed with any dressing. French is the best dressing for it. Many prefer it sprinkled with salt or served with cream and a little sprinkle of sugar.

Lesson Number Fourteen

Edible Weeds

LAMBS' QUARTERS: This is a common weed growing along roadsides and in gardens. It is light green in color with leaves that look dusted with frost. In the early season it is an easily accessible green and is cooked like spinach, with ham, bacon or by itself.

PEPPER GRASS: Pepper grass or wild mustard is an edible weed, and is akin to true mustard as a seasoning, containing the mustard flavor without the irritating effect.

NETTLES: These when young are used as greens, but care must be taken in their handling. They are the coarsest in texture of the edible weeds.

SORREL: Sorrel or sour grass is both wild and cultivated. Used with chicory or lettuce as a salad. Also is used in soups and sauces. It contains oxalic acid.

DANDELIONS: These form one of the most wholesome of all greens. They are at their best as soon as the leaves extend about two inches above the ground. They are in much finer condition when found in sheltered places.

The leaves grow bitter as they grow older.

Cook them in as little water as possible.

To eat them as a salad, cleanse and free from grit and throw into cold water, then drain and serve, usually with salt and pepper or a French dressing.

Lesson Number Fifteen

Herbs

SAGE is one of the important condiments and can be purchased dry or powdered. The sage now in powdered form is much superior to that of some years ago. Like all other articles covered by the pure food laws, it has been greatly improved. I would suggest, however, if sage dried on the stem is desired, that it be purchased green and cleansed thoroughly before drying, and then placed in covered receptacles to protect it from dust.

MINT: Spearmint is also called the meadow mint and grows wild in most parts of the United States. It is used both fresh and dried.

Minced fine, mixed with vinegar and sugar, it becomes the mint sauce served with lamb.

Crushed and boiled in a syrup it is used for sherbets and punches.

The leaves may also be candied, the same as violets or rose leaves. It may be dried to use for sweets or preserved in vinegar for sauces and salads.

TARRAGON: The green leaves of tarragon are mixed with lettuce and served with French dressing as a dinner salad.

They are also dried and used in powdered form and in vinegar.

Tarragon vinegar is used for sour sauces or salad dressings. It may be purchased as such or prepared when the fresh tarragon can be obtained, but the process takes about two months.

CAPERS are the flower buds of a trailing shrub grown largely in Southern Europe. The buds are packed in bottles and covered with vinegar. They are used for meat sauces and salads.

NASTURTIUM: The fruit of the common garden nasturtium has a flavor similar to capers and is frequently used as a substitute. It is also added to pickles to preserve them and to spiced fruits. A half pint of nasturtiums added to a large jar of pickles will prevent mold. The flowers are used for sandwiches and as a garnish to summer salads.

Remember this, and plant quantities of nasturtiums in the spring.

GARLIC is a very strong member of the onion tribe. The bulbs or "cloves" grow in clusters. One "clove" is sufficient to flavor a good-sized dish of food.

Cloves of garlic may be cut up and placed in a bottle and the bottle filled with vinegar. This vinegar may be used for salads when the flavor of garlic is desired.

BAY LEAVES: The dried bay leaves are imported and may be purchased at the drug stores. A dime's worth will last an ordinary family a year or more. They have a peculiar aroma and are in great demand as a seasoning for soups meats and sauces.

SWEET BASIL: Sweet Basil is a delightful herb to cultivate, grows profusely and gives forth a welcome aroma.

A few sprigs dropped into the soup kettle impart a seasoning that can be compared to nothing else.

Gathered and dried it may be used alone or mixed with other herbs to season soups and sauces.

PARSLEY is of two varieties, the plain or single leaf and the fern or curled leaf. The former is used chiefly for soups, etc., and the latter is used as a garnish for salads,

TO DRY PARSLEY FOR GARNISHING, select the large, curly variety. Wash thoroughly. Dip one piece at a time into boiling water, shake well and dry in the hot sun or warm oven. Keep in dry place between layers of paper in a tin can. It can then be used for garnishing by crushing the dry leaves. It is not as good for seasoning, but the color is a brighter green. For seasoning, dry it without dipping in the hot water and tie in bunches. Keep in tin cans or glass jars.

WATER CRESS grows wild in streams or on the border of lakes. Mixed with other salad materials it is excellent. It is popular as a garnish for certain meat and fish dishes and is eaten when so served. It is anti-scorbutic, palatable and wholesome.

Mixed Herbs

For general kitchen use a very satisfactory mixture of herbs for seasoning is sage, marjoram and thyme in proportions of thyme and marjoram in equal quantitity with double the amount of sage. Buy these herbs, dry, wipe leaves of dust, crumble and rub through coarse sieve, discarding the stems.

This method will be found much more satisfactory than purchasing them already ground. The flavor is much more pungent and one can be confident that there are no ground stalks in the preparation.

Seasoning Powder of Herbs

One-half ounce each of thyme, summer savory, sweet marjoram, sweet basil, dried grated lemon rind, one ounce of dried parsley, one ounce of celery seed.

Grind and powder these ingredients. Rub through a fine sieve and bottle. This powder may be used as a seasoning for dressings, brown sauce, soups and other meat dishes.

Herbs, To Preserve

Herbs should be gathered on a bright dry day, just before flowering.

Remove each leaf, place in the hot sun or in a warm oven so as to dry quickly to retain aromatic quality and color.

Bottle when dry in wide neck bottles.

Lesson Number Sixteen

Condiments

Condiments are primarily used to give relish to the food and gratify the taste, and as such should be used sparingly. The people of warm climates use them more generously because of the fact that, as a constant ingredient in meat dishes, they prevent unnatural ferments from forming.

They stimulate the digestion and are beneficial when used in moderation. It is from the Orientals and people of hot climates that we get our highest condiments. The hot weather dishes we naturally season more highly. The principal condiments are ginger, white and black pepper, mace, nutmeg, Indian curry powder, mustard, cloves, allspice, cinnamon, cassia, dill, fennel, cumin seed, coriander, celery seed, caraway, cardamon, anise, and the chili, bird and cayenne peppers.

BLACK PEPPER is made from the unripe berries, which are picked, dried, and ground, shells and all. The whole berries are called pepper corns.

WHITE PEPPER is made from the ripe seed kernels of the same berry. Both white and black pepper contain an essential oil and flavoring. Of the two the white is the more pungent.

MIGNONETTE pepper is the coarsely ground white pepper.

PAPRIKA is made from Hungarian sweet red pepper.

CAYENNE PEPPER is made by grinding the fruit pod of capsicum.

CHILI PEPPERS are small pointed peppers used in making chili sauce.

TABASCO SAUCE is made from the very hot bird pepper.

PIMIENTOES: One canned variety of red pepper is marketed under the name of pimientoes. These are not at all hot, but have a distinctive flavor. The small sized can is sufficient for an average family for as long as they will keep, or they may be removed to a glass and covered with vinegar.

GINGER is the root of a plant native to Southern Asia. Jamaica ginger is the best variety. The very young roots are scraped, boiled in a syrup until very clear and sold as candied or crystallized ginger. In the green condition or crystallized, ginger is used to flavor the insipid fruits.

CLOVES are an unexpanded flower bud dried. In purchasing cloves select those rich in oil and of a dark color. Cloves very pungent must be used sparingly.

ALLSPICE (Pimento) consists of the berry of a tropical shrub. On account of similarity in flavor to that of a mixture of cinnamon, nutmeg and cloves, it is called "allspice."

CINNAMON is the most generally used and popular of the spices. The best cinnamon comes from Ceylon. It is the bark of a tree of the laurel family, the same family that gives us in the temperate climate such plants as the sassafras and spice bush. True cinnamon is of splintery fibrous quality and is sweet and spicy, retaining its flavor long in the mouth.

CASSIA is a species of cinnamon and is often sold under the latter name.

CARAWAY, CORIANDER, POPPY SEED, CUMIN SEED, FENNEL and DILL are used by the Germans as flavorings for cakes, and breads, and are also greatly prized by the Orientals.

CUMIN SEEDS are the chosen flavor for Dutch cheese.

CARDAMON SEEDS are used as seasoning for meats, breads and cakes. The seeds are enclosed in a white pod and must be crushed or ground when used in breads and cakes.

NUTMEGS are the seed kernel of a fruit which resembles a peach. The short round nutmegs are better than the long ones, which are rather dry. The tree from which they are gathered is a native of the East India Islands and is cultivated in India and Central America. The best nutmegs, the Penang, are the shape of damson plums about an inch in length and are called Queen nutmegs. They average about seven to an ounce. The small pointed nutmegs, known as wild nutmegs, are of inferior quality and lack the oil and fragrance of the Queen nutmeg.

MACE is the seed coat of the nutmeg, and like it, has an essential oil. It comes whole or ground and is more pungent than the nutmeg. Its quality depends greatly upon the kernel from which it is gathered. That from the Queen nutmeg being the best.

MUSTARD is composed of both white and black mustard seeds. The black seeds contain an acrid substance which, when distilled with water changes into a pungent essential oil. The bright yellow mustard is usually colored with tumeric.

INDIAN CURRY POWDER is not as popular as it should be. It can be procured, bottled, for use, better than it can be put up. Not many understand that to bring out the essential flavor the curry powder should first be sauted in oil or butter.

¼ pound each of coriander seed and tumeric
1 ounce each of cumin seed and fennel seed
½ ounce of cardamon seed
1 ounce each of Jamaica ginger and allspice
10 bay leaves

Preparation: Grind all the ingredients except the bay leaves. Rub them through a fine hair sieve, mixing with the bay leaves. Bottle and cork sufficiently to exclude the air.

CREOLE SEASONING. The Creole seasoning as marketed in the South is conceded to be a necessary adjunct to Creole sauces, used much with fish. It is made of ground sweet red peppers.

GUMBO FILEE is made up of the young shoots of the Sassafras which are gathered, dried and powdered. In conjunction with ground okra it forms an ingredient for Gumbo Soups, and stews.

Lesson Number Seventeen

Fruits

Fresh fruits are generally more appetizing, refreshing and cooling than the cooked fruits.

Over-ripe and unripe fruits are to be avoided.

Unripe fruit causes stomach and intestinal disturbances.

Fortunately for the family purse the most useful fruits are long in season, the most reasonable in price, more plentiful and with better possibilities of preserving a supply when out of season. Fruits, like vegetables, are valuable for water acids and mineral salts which are more available in the uncooked than in the cooked fruit.

Fruits of great acid content, as, PIE PLANT, CRANBERRIES, GOOSEBERRIES, CURRANTS, when made into pies or sauces will have better dietetic value if soda is used to neutralize some of the acid. In pie making, the soda (one-half teaspoon to each pie) may be well mixed with the sugar. A tablespoon of flour mixed with the sugar will not only take up the moisture but will take up some of the acid, not neutralizing it but rendering it less concentrated.

In cooking fruits, sugar should be added before the process is complete. By cooking fruit a long time or in the presence of acids, the cane sugar is changed to invert sugar which has a peculiar penetrating sweetness, not as pleasant as the sweetness of cane sugar.

When sweetening fruit sauces a small saving in sugar is gained by allowing the sugar to cook with the fruit. Long cooking is to be avoided, as the flavor of fruit would be affected.

Preserving Hints

Do not buy over-ripe or imperfect fruit for canning or preserving. There is no economy in it.

Do not sprinkle sugar over the fruit and allow it to stand and draw out the juice. This will make most fruits leathery and it is only recommended in the making of conserves.

Pineapples and quinces are more tender if simmered, covered closely, in clear water, or steamed until they begin to soften, then finished in the syrup.

Have the syrup boiling when the fruit is added, then lower the heat and cook gently. Do not stir the fruit any more than necessary.

Overcooking is an almost universal error. Skim out the fruit before it is soft and thoroughly cooked, as the hot syrup poured over

it after it is put into jars will complete the cooking. After removing the fruit, boil the syrup for eight minutes before pouring over the fruit.

For preserving without sealing, equal quantities (by weight) of fruit and sugar should be used. Put them away in small receptacles to avoid disturbing a quantity.

Small fruits retain their shape and color if sugared an hour before using.

To prevent breaking, stand the glass jars on a folded wet towel, while filling with hot fruit.

The jars in which fruit or vegetables are canned should be thoroughly sterilized by heat and heated before filling.

Sterilization by heat is the only insurance necessary against the insiduous bacteria.

When canning fruits for pie material omit the sugar.

When canning fruits for sauce, sterilize the jars, fill with fruit. Make a syrup of one part water to two parts sugar, cooking it five minutes, fill jars and set them in a boiler, place covers and cook one hour. Secure the covers and remove from the fire.

Fruit Jelly

The jellying of any juice depends upon the "pectin" contained in the fruit. Pie plant is deficient, hence the difficulty in making it jell.

Here is a trade secret. Do you notice the labels on the store jelly read something like this: "The contents of this package are pure juice of strawberries and apples and cane sugar"? Which, being interpreted, means that the package labeled "Strawberry Jelly," in compliance with the Pure Food Law, which demands that the ingredients be printed on the label, is not pure strawberry jelly. Strawberries are deficient also in that property of fruit known as pectin, and apples, which are generously supplied with that property are levied upon to supply this want.

Apples can always be relied upon to help out the housekeeper and manufacturer alike in this respect.

Fruit juices must be well cooked, say about twenty minutes or more before adding the sugar, which should first be warmed in the oven. After adding the sugar, boil the syrup about five minutes, test and put in sterilized jars. Cover with paraffin.

The piquant delicacy of the fruit flavor is destroyed by cooking too long with the sugar, and with a very acid juice the jellying property is destroyed by the turning of the sugar in long cooking with an acid into a mixture of dextrose and levulose. The sugar once turned to levulose is syrupy in its consistency.

Lesson Number Eighteen

Miscellaneous Recipes Simplified

Sauce Tartar

A combination of chopped pickles, olives and capers with a salad dressing preferably a mayonnaise dressing.

German Cream Salad Dressing

½ teaspoon sugar
½ teaspoon of white pepper
1 teaspoon of salt
¼ cup vinegar
½ cup very rich sweet cream (Sour cream is preferred by many)

Preparation: Mix the dry ingredients, add the cream and stir until dissolved, then add the vinegar, stirring all the time. Never add the salad dressing to salad until just before serving. It is well to press gently in a towel or napkin all greens which have been chilled in ice water, that they may be perfectly dry before adding the dressing. When the salad dressing is poured over the wet salad leaves, it is diluted, and the greater part falls to the bottom of the bowl, a watery, insipid mixture.

Evaporated milk is an excellent substitute for cream in this dressing. Use one-third as much vinegar as evaporated milk.

Salad Dressing

It is almost impossible to make a perfect emulsion of oil and vinegar without using something for a medium. In mayonnaise dressing this is accomplished by using the yolk of eggs. There are salads where the use of a mayonnaise seems out of place and the French dressing just suits the palate. There is no hard and fast rule for the making of French Dressing. The only difficulty is that when the oil floats, too much vinegar has been added. This is one of the rules that is proven more in the exception than in observance.

1 teaspoonful salt
1 teaspoonful sugar
⅛ teaspoonful pepper
⅔ cup olive oil
4 to 6 tablespoons vinegar

French Dressing

⅛ teaspoon salt
⅛ teaspoon pepper
1 tablespoon olive oil
2-4 tablespoon vinegar

METHOD: The materials may be put together in a bottle, a patent stoppered bottle is very convenient for this purpose, as it is easily cleaned, and can be placed in the ice chamber of the refrigerator without fear of spilling its contents. Put the materials together, any time before serving, to chill and when salad is ready to serve, shake well and pour over the salad.

Worcestershire, Harvey, Walnut, anchovy or tobasco sauce may be used to season a French dressing. Or an aromatic vinegar may be used instead of the plain. Onion juice or tomato catsup is equally in favor as seasoning.

Rubbing the salad dish with a cut clove of garlic is a popular seasoning.

For family use the housewife puts the salad and dressing all together and serves it complete. By a constant change of seasonings a variety of salads may be made up of the same materials.

Salads should hold a prominent place in the daily menu.

The green vegetables contain the salts necessary to the well being of our systems. The oil contributes to the heat of the body and a small amount of acid aids in the digestion of other foods and lends zest to the meal.

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RECIPES FOR SAUCES—Standardized
(Drawn butter and cream sauces as base)

Drawn Butter, Unsweetened

Explanatory: This sauce forms the base for many seasonings and is then called by name of the seasoning or addition.

1 cup hot water
2 tablespoons flour
2 tablespoons soft butter
Salt and pepper to season

Preparation: Heat the water in a small sauce pan, cream the butter and flour and stir into the hot water until creamy. Add seasoning.

Egg Sauce

This is the Drawn Butter with two hard boiled eggs either sliced or chopped added to it before serving.

English Drawn Butter

Made by replacing one-quarter of the water with vinegar and by adding butter the size of a walnut just before serving.

Horse Radish Sauce

This is the Drawn Butter with plain grated or bottled horseradish added.

Cheese Sauce, To Serve with Fish

Use the Drawn Butter recipe with a very strong grated cheese and seasoning of paprika.

Drawn Butter, with Sugar

1 cup water
2 tablespoons flour
½ cup sugar
1 tablespoon butter

Preparation: Heat the water; mix the sugar and flour thoroughly. Stir into the hot water with the butter. Cook until creamy. Often fruit juice jelly or lemon are added to this sauce.

Cream Sauces

Explanatory: Cream sauces without sugar are the base for any seasoning which may be added as desired, such as lemon juice, peppers, parsley, eggs cooked or uncooked, fish, etc., and are used (1st) for soups, (2nd) as accompaniment for meats, fish and vegetable dishes, (3rd) as a medium for croquettes and timbales. The sauces differ as to consistency.

Cream Sauce (No. 1, Thin)

1 cup milk
1 tablespoon butter
½ teaspoon salt
1 tablespoon flour

Preparation: There are three ways of making which apply to all three sauces. The butter may be omitted in No. 1.

Method No. 1: Mix the flour with about half its bulk of milk, beat smooth and add enough more to thin sufficiently to add to the hot milk without lumps. Heat the milk and stir in the mixture with the butter and salt. Cook until creamy.

Cream Sauce (No. 2, Medium)

1 cup milk
2 tablespoons butter
½ teaspoon salt
2 tablespoons flour

Method No. 2: Warm the butter in a sauce pan, cream in the flour add the milk and cook until creamy. Add salt.

Cream Sauce (No. 3, Thick)

1 cup milk
4 tablespoons butter
½ teaspoon salt
4 or 5 tablespoons flour

Method No. 3: Heat the milk in a double boiler, cream the butter and flour thoroughly, then stir into the milk until creamy. Add the salt. As the butter dissolves in the hot milk the flour is taken up.

Cream Sauces, Sweetened

Explanatory: These sauces are the base for a variety of flavorings and combinations, more or less flour or sweetening may be used or the sugar may be replaced by jelly or fruit juices. Eggs, either yolks or whites, may be added.

Cream Sauce, With Sugar

1 cup hot milk
2 tablespoons flour
½ cup sugar
1 tablespoon butter

Preparation: Mix flour and sugar thoroughly and stir into the hot milk, adding the butter. Cook until creamy.

Lesson Number Nineteen

Beverages

COFFEE, Explanatory: Coffee heads the list of desirable beverages.

Green Coffee improves with age under proper conditions.

Roasted Coffee on the contrary deteriorates.

Roasted and Ground Coffees, like most of our food products, were for years, badly adulterated, but that condition has been largely changed with the advent of our pure food laws. Our greatest protection is in a sealed package with the manufacturer's name on the label.

COFFEE CHAFF: Coffee processes in the last decade have disclosed the means of eliminating the undesirable chaff to which was laid the only real objection to coffee effects, as the chaff contains the tannin, the effect of which, in coffee, has been considered injurious.

The ordinary grinding process of a decade ago has undergone a revolution to the vast improvement of coffee. The better grades are now steel cut into uniform size instead of crushed into large and small particles and dust.

Quality in a measure determines the price.

GROUND CHICORY is often added to cheap or inferior coffee. We advise that ground chicory root (which resembles ground coffee) be purchased of tea and coffee merchants, and added to coffee if the flavor is desired.

COFFEE ECONOMY: It is economy to use pulverized coffee of high grade rather than cheap grade coffee coarsely or indifferently ground.

COFFEE PERCOLATORS: These standardize the coffee to be served, as they compel accurate measurement.

LEFT-OVER COFFEE: Good coffee may be kept hot for some time provided the grounds are removed; properly made coffee may be reheated if poured off the grounds before setting it away. There is no reason why a housewife who would carefully put away a thimbleful of butter left on a plate would throw away two or three cups of left-over coffee.

METHOD: Pour the coffee from the grounds and set away. When coffee is prepared for the following meal, make the measure less by the amount of left-over coffee. Make coffee in usual way. Reheat but do not boil the cold coffee and when the regular coffee is ready for the table add the reheated coffee to it.

Perfect Coffee

Select a good quality of coffee, not necessarily the highest priced. Have the coffee ground fine and uniform, steel cut preferred. Supply yourself with a granite coffee pot with a white lining or one of aluminum, always keeping it as sweet and clean as your dinner plates. For six persons place six rounding tablespoons of coffee in the coffee pot. Pour over the coffee three pints (six cups) of boiled water. Place over a gentle flame and simmer five minutes after reaching the boiling point. Then mix about two teaspoons of egg in one-half cup of cold water and pour into the coffee to clear.

To secure the perfect beverage it is absolutely necessary to immerse the coffee and simmer in order that the essential oil and flavor of the berry be extracted. Some particular persons heat the ground coffee slightly before adding the water.

Cafe Noir

(After Dinner Coffee)

After dinner coffee is stronger and richer than that made for the breakfast table, and is served clear, although cream may be passed with the sugar.

When Cognac or Petit Brule is served with the after dinner coffee, cream is entirely out of place.

When Cognac is served with the black coffee, the loaf or domino sugar is placed in the spoon over the cup of coffee, and the cognac is poured over the sugar and a lighted match touched to it. When burned away, the spoon and contents are dipped into the cup. This carmelizes the sugar and when added to the coffee imparts to it a special flavor, that is very appropriate after a heavy dinner.

Tea

Scald the pot. Remove the water, and put in a level teaspoon of good tea to each cup of water. Take the water at its first boil. Cover the pot with a cosy and stand it away from the fire for five minutes. Stir the tea and pour at once.

The ordinary English tea cosy, a sort of padded cap, is to be recommended.

CAUTION: Tea must not be made over the fire, nor should it be made in a metal pot. The tannic acid acts on the metal, destroys the flavor of the tea and makes the infusion unwholesome.

LEMON WITH BLACK TEA serves a certain dietetic purpose. "This is not a mere fad or 'foreign fashion,' there is a scientific reason beneath the surface. The citric acid of the fruit offsets the tannic acid of the tea rendering it refreshing and wholesome. It is needless to add that black tea be used, not the green or mixed."—R. M. Fletcher Berry.

Chocolate

To make one quart of chocolate, put into a saucepan four rounding teaspoons of grated chocolate. Add a half pint of boiling water, stirring all the white, until the mixture reaches boiling point. Boil just a moment.

Add one and one-half pints of milk, and three rounding tablespoons of sugar, and stir constantly until the milk is very hot. Take from the fire, turn into a heated chocolate pot and serve with whipped cream.

In the absence of whipped cream which is not always available, a marshmallow is placed in each cup and the chocolate poured around it.

Plain cream is passed in a pitcher.

The chocolate is very often made with water omitting the milk entirely.

Lemons in Drinks

"When one is forty miles from a lemon, one may still have 'lemonade' by using citric acid in crystals or pulverized, with or without a pure lemon tincture as flavoring. No ill effects can accrue from using this acid in such trifling quantity as required to make tart a drink or pudding sauce. It cannot completely take the place of the fruit juice, but, as it is the acid found in, and taken from the fruits of the citrus family, it can be substituted, therefore, if necessary, in moderation without harm."—R. M. Fletcher Berry.

Lesson Number Twenty

EQUIPMENT OF KITCHEN

(Care and Requirements)

Kitchen Floor

The kitchen floor will be more sanitary and easily kept clean if well oiled. Then with warm, soapy water the floor can be cleansed. Avoid white scrubbed floor. Constant scrubbing with strong alkalies robs the wood of its natural resistance to absorption. Thereby rendering it less sanitary.

A model kitchen will be provided with ranges, work tables, sink and cupboards easy of access and arranged in proper relation to each other to avoid needless steps in the preparation of the food, in the placing of it on the table, and the clearing up of soiled dishes.

China Closets and Cupboards

For convenience in placing food and dishes on the table a combination china closet and cupboard should be built in between the kitchen and dining-room with shelves, and drawers and a serving buffet accessible from both rooms.

Wheel Tray

If living in rented apartments without these conveniences built in, provide a wheel tray upon which to place all needed articles for setting the table. When food is prepared the wheel tray will convey it to the dining-room and later carry the soiled dishes to the kitchen.

In the absence of a wheel tray a light pine box thirty-two inches long and about twenty-four by fourteen inches can be substituted by putting ball bearing rubberoid casters on one end and staining the box to correspond with the finish of the woodwork or enameling it an ivory white.

Sinks

Sinks should be placed in the center of wall space instead of in corner of kitchen.

Sinks should have drain pipe in the center with drainboard on each side. The drain pipe should be provided with large trap and easily removable screw cap, which, in case of emergency can be taken off to drain a stopped up pipe. Before leaving the kitchen sink when the work is completed, a quart or so of boiling water should be poured down the sink to flush the pipes and leave the trap full of clean water.

Pantry

Only in the larger families are pantries a necessity where large stores of food must be kept.

For the small or medium family kitchen cupboards and refrigerator will take care of all provisions and have everything easily accessible.

Lighting and Ventilation

Too much attention cannot be given to the proper arrangement for light and ventilation. If the kitchen is a one-story addition, there is nothing better than a properly constructed metal skylight with ventilator.

Windows should be placed over sinks and work tables. Casement windows with fine white screening provide good light and ventilation over sinks and ranges. They may be fitted with sliding frames or with glass doors. Windows should be placed in all outside walls of the kitchen. Large, easily reached windows should be placed in cellar-way. Shelves, cupboards and drawers are much more satisfactory if coated with white paint or enamel.

A kitchen closet shallow in depth should be fitted with hooks for brooms, mops, pails, brushes and shelves for soaps and cleaning powders, and all of the paraphernalia for cleaning purposes.

Refrigerators

These should be built into wall so that ice can be put in from outside. Drain pipe with trap should be connected with sewer. There should be a trap in the sewer pipe in addition to the small trap in refrigerator pipe. The connection must not be sealed.

Refrigerators if not properly cared for may become a serious menace to health. Cleanliness is essential to the proper care of foods.

Milk, cream and butter should each have their perfectly tight covers, as their flavor and keeping quality is subject to surrounding odors. The flavor of butter is easily destroyed when left uncovered in a refrigerator in which fruit or onions are exposed.

Gas Range

The gas range seems to be the most difficult of all ranges to keep clean, and manufacturers are placing ranges now on the market that are enameled.

Do not use scouring soaps on the gas range. If inclined to rust, rub a little clean grease on it.

The blaze should be light blue. If the balance of air (oxygen) and gas (carbon) is as it should be the flame will produce the greatest amount of heat. The red or yellow flame indicates that there is not enough air mixed with the gas. This condition should be changed at once by opening the air mixer or reducing the flow of gas from the small orifice. This is accomplished with a wrench to fit the connection, or with a pair of pliers. The difference can be easily noted in the supply of heat by holding the hand over the flame when the air is shut off, and again when the adjustment is right.

System

System is a great aid to efficiency in all things but more so in the kitchen than in any other part of the home.

It is not always possible to proceed in the same routine each day with the household duties but certain duties must be taken care of each day that there may be no accumulation of neglect.

WORK TABLES, SINKS and RANGE OVENS should be proper height from the floor to eliminate tedious stooping. Thirty-two or thirty-four inches is now considered standard. The kitchen is the laboratory, or workshop of the home and should be properly equipped for efficient work. Certain essentials are necessary to neatness and dispatch. The furniture of the kitchen should be arranged so that few steps are required.

SHELVES or RACKS with large china closet hooks on the under side arranged near the range and tables afford a convenient means of having at hand small skillets, cooking forks, basting spoons, egg beaters and the various tools in almost constant use.

The FLOUR and SUGAR BINS should be metal lined with cover of same materials to properly safeguard these materials from mice or pests.

HOLDERS about a foot square made from heavy outing cloth with brass ring secured to one corner should hang near the range where hands can find them quickly.

A HIGH STOOL relieves some of the strain, when duties demand much standing in the kitchen.

BRUSHES of all kinds should be in the kitchen to facilitate cleaning.

Fit the tables and movable furniture with BALL-BEARING CASTERS.

ALUMINUM solves the problem in cooking utensils, being at once light, durable and fool-proof. When accidents happen, as happen they will, the aluminum dish comes out of the mishap unscathed. Acid does not form a poison when in contact with aluminum.

COOKING UTENSILS should be selected with long, strong handles, rather than bails, so as to keep the hands as far away as possible from the uncomfortable and destroying heat, also pans and kettles provided with long handles can be hung up, thus disposing of them to better advantage in the cupboard. While the first cost of aluminum may seem higher than for other metals, their long wear and serviceable quality makes aluminum utensils cheaper in the end.

Molding Canvas, being a piece of blue and white ticking or canvas three-quarters of a yard square and double, forms a better surface on which to roll out baking powder biscuits, cookies, doughnuts, pastry, etc., than the ordinary molding board. Less flour adheres to the article under preparation. It can be folded up and laid away each time. is less trouble to care for and more cleanly than the molding board.

The canvas or ticking may go to the laundry just the same as any other kitchen linen.

Utensils for Kitchen

Following are the necessary articles for kitchen work. These may be selected with more or less cost, depending upon budget for this expense. Selection should be governed by utility.

Ordinary Vessels and Pans for Use on Range and in Oven:

1 tube cake pan, large
1 tube cake pan, small
2 medium pie pans
1 covered roaster
Frying pans, assorted sizes, steel or aluminum
Bread pans
1 long handled Windsor kettle
1 long handled Berlin kettle
2 long handled smaller kettles
1 long handled frying kettle, wire basket to fit
1 tea pot, Guernsey ware
1 8 or 9-inch pie pan
1 5-inch pie pan
1 biscuit or corn bread pan, 7x12x1½ in.
2 deep cup gem pans, 6-cup
1 straight side kettle for soup stock or cooking ham
1 tea kettle
1 rice boiler
1 egg basket
Steamer kettle
1 coffee pot, aluminum or white enamel lined
6 custard cups or ramekins
1 pancake griddle

Utensils for Preparation of Food:

1 large mixing crock
1 smaller mixing crock
2 half-pint measuring cups divided in thirds and quarters
1 cooky cutter
1 food grinder
1 lemon reamer, glass
1 pancake turner
1 Dover egg beater, large
1 Dover egg beater, medium
1 Dover egg beater, individual
1 rolling pin, loose handles
1 basting spoon
2 teaspoons
1 long handled cooking fork
1 bread knife
1 hack saw
1 cork puller
1 dozen steel skewers
1 cream whip
1 funnel
1 salt box
1 timbale iron
1 soup or gravy strainer
1 bottle cap remover
2 5-inch white bowls
1 flour sifter, quart size
1 flour sifter, 1-cup size
1 small biscuit cutter
1 quart measuring cup
1 doughnut cutter
1 flat grater
1 nutmeg grater
1 wire strainer
1 VanDeusen egg whip
1 wire potato masher
1 fruit press or rider
1 slotted wooden spoon
2 tablespoons
1 spatula
1 paring knife
1 meat knife
1 can opener
1 knife sharpener (carborundum)
1 pair shears
1 cream dipper, for bottles
1 salt shaker (aluminum)
1 rubberset pastry brush, 1-inch
1 pastry bag with rose tube
1 berry huller

Dish Washing

Collect knives, then forks and spoons, place them in a bowl, handles up. When ready to wash set bowl and all into the dish pan. This is a much more sensible way than scattering them in the dish pan of hot water. Scrape all crumbs, scraps and dough from the dishes into the waste jar, if there is some definite use for them. If there is no animal to dispose of them scrape them into a paper and burn them.

Dishes with egg or dough adhering to them should be put to soak in cold water.

Pile all dishes of each kind together in the dish pan with drainer near at hand. Fill the dish pan half full of soapy water. Wash the glasses first, rinse and dry at once. Then wash the cups, saucers, plates, etc., taking the cleaner and smaller dishes first. Wash the silver, rinsing all with hot water. Last of all wash the cooking utensils and scour if necessary. Do not put wooden handles of knives, forks or the Dover egg beater into the water. Never leave soap in the sink or dish pan. When all are wiped, pile the different kinds together and put in their places. Empty dish pan, wash the towels in hot water, rinse and hang to dry. Wash table in cold soapy water, soap dish and sink in hot soapy water.

Towels made from flour sacks or unbleached muslin of same quality, and hemmed, make the best dish towels. The best dish cloths and the most satisfactory, are those sold for the purpose as they never become stringy. A small ox-fiber brush with a long handle and a good bristle bottle brush are, with the dish mop, indispensable in doing up the kitchen work and save the hands a great deal of discomfort, keeping them in better condition. No woman with common sense will recklessly or needlessly sacrifice the comfort and appearance of her hands over such a mechanical detail of the housework.

Neither can the washing of the dishes be accomplished in an entirely sanitary way unless the dish cloth and dish towels give place to hot soapy water and dish mop and long handled brushes. These sanitary conditions preclude the putting of the hands into the water. My further advice is to make one operation per day of the dish washing, for the small family, and where no maid is kept. In large families a dish washing machine is an economy of time, energy and a necessity.

United States Bulletins

For reference would suggest that use be made of the privilege accorded all by the United States Department of Agriculture.

DIRECTIONS FOR INFORMATION: As the publications are being printed from time to time it is well to have name and address placed on the mailing list. If the appended list of Bulletins does not include the desired subject, write to the Department asking for printed list, from which selections may be made.

When the supply for free distribution is exhausted the bulletins can be purchased for five cents.

Bulletins on various subjects are prepared for sale, to obtain a list of such, address the Superintendent of Documents, Washington, D. C.

For all other bulletins address the United States Department of Agriculture, Washington, D. C., Division of Publications.

Besides the following list there are many bulletins particularly valuable to farm homes. Why blunder through a lifetime of successes and failures to achieve individual experience when we can have the benefit of advice from a host of workers skilled to separate the useful from the useless?

No. 34 Meats
No. 85 Fish as Food
No. 121 Beans, Peas and other Legumes as Food
No. 128 Eggs and Their Uses as Food
No. 142 Principles of Nutrition and Nutritive Value of Food
No. 182 Poultry as Food
No. 203 Canned Fruits, Preserves and Jelly
No. 232 Okra: Its Culture and Uses
No. 249 Cereal Breakfast Foods
No. 256 Preparation of Vegetables for the Table
No. 293 Use of Fruit as Food
No. 298 Food Value of Corn and Corn Products
No. 332 Nuts and Their Uses as Food
No. 359 Canning Vegetables in the Home
No. 363 The Use of Milk as Food
No. 375 Care of Food in the Home
No. 389 Bread and Bread Making
No. 391 Economical Use of Meat in the Home
No. 413 The Care of Milk and Its Use in the Home
No. 426 Canning Peaches on the Farm
No. 459 House Flies
No. 478 How to Prevent Typhoid Fever
No. 487 Cheese and Its Economical Uses in the Diet
No. 490 Bacteria in Milk
No. 521 Canning Tomatoes at Home and in Club Work
No. 526 Mutton and Its Value in the Diet
No. 535 Sugar and Its Value as Food
No. 653 Honey and Its Uses in the Home
No. 103 Referee Board Consulting Scientific Experts. Ira Remsen, Chairman

Don'ts for Housekeepers

Don't be without reliable scales.

Don't be without a set of tested measures, both dry and liquid.

Don't be without a yard stick.

Don't buy from a dealer or huckster who uses dented measures.

Don't be afraid to tell your dealer if you are being cheated; it may be the fault of his clerk.

Don't waste energy, time and strength by taking unnecessary steps.

Don't fail to use your head to save your heels.

Don't neglect your refrigerator; several million bacteria may be breeding in the drain pipe.

Dont fail to make an intimate acquaintance of the sanitary papers specially prepared for various household purposes.

Don't have sink and table too low for comfort. Secure good light for sink and range, and don't have either in dark corner.

Don't overlook covering drain boards with zinc or galvanized iron when the sink and drain shelves are not in one piece. The most sanitary sink is of white enamel, with sink, wall back and drain shelves in one piece.

Fireless Cooker—The fireless cooker with radiator is almost as necessary as the range. Fitted with aluminum vessels and heating plate or radiator, they can be obtained at the stores, and are so complete that the amateur hesitates to make one at home, but many very good ones are made with a 50-pound lard can, a galvanized inner can for a lining and a filling of clean ashes as a non-conductor. The aluminum cooker vessels with tightly clamped cover and the radiators purchased at the department stores complete a very serviceable fireless cooker.

Consult your State Weight and Measure Department regarding weights and measures.

Send to the Agricultural Department at Washington, D. C., for pamphlets on cooking, canning of fruits and vegetables, sanitation and plans for model farms and farm houses. These are free for the asking.

Every kitchen should be provided with a tested scale of about 20 pounds capacity.

See that every dollar buys a hundred cents' worth

Check up your purchases when delivered and see if they agree with your order.

Order your groceries for the day early in the morning and do not ask your dealer to deliver twice in one day.

Pay your bills promptly and discourage the trading stamp evil.

Discourage also the killing of calves for food as one of the reasons for the high cost of beef. Let them grow until they are valuable as food and a profit to the stock raiser.

Hints for the House-wife

Contributed by Ralph W. Smith, Minn. Dept. of Weights and Measures.

Make a business of your kitchen and run that business as carefully as does the merchant who sells you your food commodity.

Provide yourself with a reliable scale and correct measures, and in order to give them the same legal status as those of your merchant, as well as to assure yourself of their accuracy, have them tested and sealed by a Weights and Measures officer.*

Inform yourself as to the Weights and Measures laws of your State or City that you may know how food products should be sold; use your sealed scale and measures to check your purchases; if there is a violation of the law or a discrepancy in weight or measure, notify the Weights and Measures officer—his business is to help you.

In making a purchase by weight, observe whether the scale is in balance before the weighing is performed, that is, whether the beam oscillates freely in case of a beam scale, or whether the indicating pointer rests on zero in a computing scale.

Bear in mind that a liquid quart is not the same as a dry quart, but that the dry quart of 67.2 cubic inches is over 14 per cent larger than the liquid quart of 57.75 cubic inches. Remember also that in most States the sale of a dry commodity by the bushel, peck, etc., means a sale of a definite number of pounds. In buying dry commodities, therefore, procure the bushel list of your State and check your purchases by weight from that table.

Buy in definite quantities, as so many pounds or so many quarts; DO NOT buy a dime's worth or a quarter's worth.

If you buy foodstuffs put up in package form, remember that there is a Federal law requiring the net contents of the package to be marked thereon. Look for this marking and you can still tell just how much you are buying.

Familiarize yourself with the tables given below so that you can think intelligently in terms of the different units:

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*In the State of Minnesota this service is free as the fee system has been abolished.

Reference Tables—English System

LIQUID MEASURE

4 gills (gi.) = 1 pint (pt.)
2 pt. = 1 quart (qt.) = 8 gills.
4 qt. = 1 gallon (gal.) = 8 pints = 32 gills.
31½ gal. = 1 barrel (bbl.) = 126 quarts.
2 bbl. = 1 hogshead (hhd.) = 63 gallons = 252 qts.

APOTHECARIES' FLUID MEASURE

60 minims (m.) = 1 fluid dram (fl. dr.)
8 fl. dr. = 1 fluid ounce (fl. oz.) = 480 minims.
16 fl. oz. = 1 pint (O.) = 128 fl. dr. = 7680 m.
8 O. = 1 gallon (cong.) = 128 fl. oz. = 1024 fl. dr.

DRY MEASURE

2 pints (pt.) = 1 quart (qt.)
8 qt. = 1 peck (pk.) = 16 pints.
4 pk. = 1 bushel (bu.) = 32 qts. = 64 pints.

AVOIRDUPOIS WEIGHT

27 11-32 grains (gr.) = 1 dram (dr.)
16 dr. = 1 ounce (oz.) = 437½ grains.
16 oz. = 1 pound (lb.) = 256 drams = 7000 grains.
100 lbs. = 1 hundredweight (cwt.) = 1600 ounces.
20 cwt. = 1 ton (t.) = 2000 pounds.

TROY WEIGHT

24 grains (gr.) = 1 pennyweight (dwt.)
20 dwt. = 1 ounce (oz.) = 480 grains.
12 oz. = 1 pound (lb.) = 240 dwt. = 5760 gr.

APOTHECARIES' WEIGHT

20 grains (gr.) = 1 scruple (℈.)
3 ℈ = 1 dram (ʒ) = 60 gr.
8 ʒ = 1 ounce (℥) = 24 ℈ = 480 gr.
12 ℥ = 1 pound (lb.) = 96 ʒ = 288 ℈.
= 5769 gr.

LINEAR MEASURE

12 inches (in.) = 1 foot (ft.)
3 ft. = 1 yard (yd.) = 36 inches.
5½ yards = 1 rod (rd.) = 16½ feet.
320 rods = 1 mile (mi.) = 1760 yards = 5280 feet.

CHAIN MEASURE

7.92 inches = 1 link (li.)
100 li. = 1 chain (ch.) = 66 feet.
80 ch. = 1 mile (mi.)
The engineer's chain is 100 feet long and consists of 100 links.

SQUARE MEASURE

144 square inches (sq. in.) = 1 square foot (sq. ft.)
9 sq. ft. = 1 square yard (sq. yd.)
30¼ sq. yd. = 1 square rod (sq. rd.)
160 sq. rd. = 1 acre (a.)

SURVEYOR'S MEASURE

625 square links (sq. li.) = 1 square rod (sq. rd.)
16 sq. rods = 1 square chain (sq. ch.)
10 sq. ch. = 1 acre (a.)
640 a. = 1 square miles (sq. mi.)
36 sq. mi. (6 mi. sq.) = 1 township (tp.) = 23040 a.

CUBIC MEASURE

1728 cubic inches (cu. in.) = 1 cubic foot (cu. ft.)
27 cu. ft = 1 cubic yard (cu. yd.)

CIRCULAR MEASURE

60 seconds (") = 1 minute (').
60 minutes = 1 degree (°).
360 degrees = 1 circle (c.)

Number of cubic inches in U. S. Standard capacity measures:

LIQUID MEASURE

1 gallon contains 231 cu. in.
½ gallon contains 115.5 cu. in.
1 quart contains 57.75 cu. in.
1 pint contains 28.875 cu. in.
½ pint contains 14.437 cu. in.
1 gill contains 7.218 cu. in.
1 fluid oz. contains 1.804 cu. in.
1 dram contains .225 cu. in.

DRY MEASURE

1 bushel contains 2150.42 cu. in.
½ bushel contains 1075.21 cu. in.
1 peck contains 537.60 cu. in.
½ peck contains 268.80 cu. in.
¼ peck contains 134.40 cu. in.
1 quart contains 67.20 cu. in.
1 pint contains 33.60 cu. in.
½ pint contains 16.80 cu. in.

Pronunciations and Definitions

a la Broche		Cooked on a skewer
Anchois	an-shoa	Anchovy
Andalouse	an-da louz	In Spanish style
Anglais, e	an-glez	In English style
Animelles	a-ni-ze-t	Lamb's fried
Aspic	as-pic	Meat jelly
Attereaux	â-te-ro	Alternate pieces of food cooked together on a skewer
Au	ô	To or with, singular
Aux	ô	To or with, plural
Aubergine	o-ber-jen	Egg plant
Au-Gras	o-gra,s	With meat or fish.
Au-Gratin	o-gratin	Food covered with sauce, sprinkled with crumbs and baked
Au-Jus	o-jus	With natural gravy
Au-Maigre	o-maigre	With food other than meat
Baba	baba	A light yeast raised cake
Bain-Marie	bin-mari	Hot water bath: a double kettle
Banquet	Ban-ke	Banquet
Barde	bar-d	Slices of bacon put around poultry breasts, in roasting
Bavarois	ba-va-roa-z	Bavarian cream
Bearnaise	be-ar-naz	Name of a sauce; Swiss style
Bechamel	be-sha-mal	A rich cream sauce
Benedictine	be-ne-dic-tin	Name of a liquor
Beurre	beu-r	Butter
Beurre Fondu	beu-r fon-du	Melted butter
Beurre Noir	beu-r nǫ-ar	Browned butter
Bisque	bis-k	Shellfish soups
Blanc	blan	White sauce
Blanc-Manje	blan-man-je	A dessert made of milk and corn starch
Blanquette	blan-ke-t	Ragout with white sauce
Bombe	bon-b	Spherical mold used for ice cream and ice pudding
Bonne Bouchees	bon-bou-she	Name generally applied to highly seasoned patties
Bordeaux	bor-do	Pertaining to Bordeaux
Bouchee	bou-she	Mouthful
Bouchees		Small puff paste patties (petit pates) small enough to be a traditional mouthful only
Boudin	bou-din	Puddings made of meats, game poultry and fish in form of sausages
Bouilla-baisse	bou-ya-bas	Thick fish soup
Bouillon		A plain, clear soup. Beef broth
Bourgeoise	bour-joa	Plain, family style

Braise(d)	brè-z	Meat, game and poultry cooked in covered pan with extra heat on cover
Brie	bri	Name of a cheese
Broche	bro-sh	A kitchen ntensil; a skewer
Brochettes	bro-she-t	Meats broiled on skewers
Cafe (Noir)	ka-fe	Strong (black) after dinner coffee
Camembert	ko-mem-ber-t	Name of a cheese
Canape	ka-na-pe	Fried sliced bread used for to cover with paste foods
Cannelons	ka-ne-lon	Thin strips of meat stuffed and rolled
Capon	ka-pon	A young male foul that has been castrated and fattened for the table
Caramel	ka-ra-mel	Burnt sugar, used for coloring
Casserole	ka-s-rol	A hollow mold of rice; a saucepan
Caviar	ka-vi-ar	Food made of the salted roe of sturgeon, cod, salmon
Cerises	se-ri-z	Cherries
Chapon	sha-pon	Capons; piece of bread boiled in the soup; crust of bread rubbed with garlic put in salad
Charlotte	shar-lot	A mold lined with bread or cake filled with fruits or cream
Chasseur	sha-seur	Hunter
Chaud	sho-d	Hot
Chaud-froid	sho-froa-d	Food prepared hot, then made into a more suitable form to eat when cold
Chef (de cuisine)	shef	Chief of kitchen; head cook
Chicoree	shi-ko-re	Chicory
Chiffonade	shi-fon-ade	Vegetables shredded.
Chipolata	shi-po-la-ta	Style of a garnish that contains chihhals (a sort of onion)
Chives	chi-vs	A flavoring herb
Choux	show	Cabbage; also name of a paste for fritters
Cockie-Leckie		A Scotch soup
Compote	kon-po-t	A stew of fruit, sometimes applied to a stew of birds
Court-Buillon	kour-bou-ion	A preparation of wine, water and savory herbs in which fish is cooked
Creole	kre-o-l	Franco-Spanish colonists. Name of a soup, sauce and garnish
Cresson	kre-son	Watercress
Cromeskies	krom-skis	Croquette mixture, wrapped with bacon, dipped in batter, or covered with paste and fried.
Croquette	kro-ket	A sweet or savory preparation, bread crumbed and fried crisp
Croustade	krous-tade.	Hollow, fried shapes of bread
Crouton	krou-ton	Fried bread, cut for garnishing
Cuisine	kui-zi-n	Kitchen

Curacoa	ku-ro-so	A liqueur
Dariole	da-rio-l	A mould lined with thin paste and filled up with custard, whipped cream, etc.
Dejeuner	de-jeu-ne	Breakfast
Demi Glace	de-mi-glas	A rich gravy; frosting
Demi Tasse	de-mi-ta-s	Half cup
Diable	dia-bl	Devil; name of a sauce
Eau	ô	Water
Eau de Vie	o-de-Vie	Water of life
Ecarlate	e-kar-la-t	Name applied to sauce containing red colored food, such as lobster roe, red tongue, etc.
Eclair	e-kler	Puffs filled with pastry cream
Entrees	an-tre	Made dishes for the first course
Entremets	an-tre-me	Dressed vegetables, large salads, sweets of of all descriptions
Epigramme	e-pi-gra-m	An entree of two pieces of food, one bread-crumbed, the other plain, both fried and served together
Escalops	es-col-op	Thin slices of meats or fish
Escarole	es-ka-ro-l	Endive
Espanole	es-pa-gno-l	One of the grand stock sauces from which is made the special sauces (brown)
Farce	far-s	Stuffing, forcemeat
Filet	fi-le	Fillet. The undercut of a loin of beef, mutton, veal, pork or game
Fleur	fleur	Flower
Foie (de Veau)	foa	Liver (of calf)
Foie Gras	foa-gras	Liver (of geese)
Fondue	fon-du	Cheese and eggs
Francaise (a la)	fran-ce-z	French style
Frappe	fra-pe	Partly frozen
Fricandeau	fri-kan-do	Piece of veal, larded and braised
Fricassee	fri-ka-se	A dish made of chicken, or any small animal, generally in a rich yellow sauce
Froid	froa	Cold
Fromage	fro-ma-j	Cheese
Gateau	ga-to	Cake
Genevois, e (a la)	je-n-voa-z	Geneva style
Glace	Gla-s	Ice
Gorgonzola	gor-go-nzo-la	Name of an Italian cheese
Goulash	gou-lash	Name of an Hungarian stew highly seasoned
Gratin (au)	gratin	Browned part; a dish as gratin is the food covered with sauce, sprinkled with crumbs and browned
Grille	gri-i	Broiler, gridiron

Gruyere	grui-ier	Name of a French cheese
Haricot	ha-ri-co	Kidney bean; stewed meat with turnips, etc.
Hollandaise	ho-lan-de-z	In Dutch style; also name of a sauce
Hors-doeuvre	hor-deu-vr	Appetizer, side dish
Huile	ui-l	Oil
Huitre	ui-tr	Oyster
Jardiniere	jar-di-nie-r	A dish of mixed vegetables principally carrots and turnips
Jolie-fille (a la)	join-fi-e	Dishes fair to look upon
Julienne	ju-lie-n	Name given to shredded vegetables, i. e., carrots, turnips, etc., also name of a vegetable soup
Jus (au)	ju	Juice, gravy, with meat gravy
Kirsch-wasser	kirsh-ouazeur	Name of a liqueur made from cherries
Kummel	kum-mel	Name of a Russian liqueur
Lait	lè	Milk-white of egg
Lardon	lar-don	Strips of fat used for larding
Légumes	lé-gu-m	Vegetables
Liason	lie-zon	Thickening (yolks of eggs, etc.)
Macédoine	ma-se-doa-n	Dish of different vegetables; fruits
Madelines	ma-de-lin-es	Small cakes baked in a mold
Maigre (au)	mè-gr	Without meat; food other than meat
Maître (d'hotel)	mê-tr	Name of a sauce
Marinade	ma-ri-na-d	To lay or soak in pickle
Marseillaise (a la)	mar-se-le	Style of Marseilles
Mayonnaise	mè-on-ai-se	A salad dressing
Menu		The bill of fare. Literally the word means minute detail of courses
Napolitaine	na-po-li-tin-e	Style of Naples; also name of a sauce
Neige (a la)	nè-j	Dishes having a white border (of rice, potatoes, etc.)
Noir (cafe)	no-ar	Black coffee
Nougat		Almond rock candy
Paprika	pa-pri-ka	Hungarian red pepper
Pate	pa-té	Patty; pie
Petite	pe-ti-t	Small; little
Pilau	pi-lo	Pilaff, rice, a dish of onions and rice
Pique	pi-ke	To lard meats with strips of bacon and vegetables
Pistache	pis-ta-sh	Pistachio nuts
Pois	poa	Peas
Pomme de terre	po-m	Apple
Potage	po-ta-j	Soup
Pot-au-feu	pe-to-feu	A name of a soup
Potpourri	po-po-rē	A stew of various kinds of meats and spices
Puree		A smooth pulp; mashed vegetables; thick soups

PRONUNCIATIONS AND DEFINITIONS

Quenelles	ke-nel-les	Oval shapes of force-meat made of chicken, veal, rabbit
Rechauffé	re-sho-fe	Cold food, made hot again
Rissole	ri-so-l	A croquette mixture enclosed in pastry and fried
Robert	ro-ber-t	Name of a spicy sauce
Roux	rou	A mixture of flour and butter
Saute	so-te	To cook quickly over a sharp fire, with just enough oil or butter to prevent sticking
Sautoir	so-toar	A saute pan
Serviette	ser-vie-t	Table napkin
Soubise	sou-biz (bees)	Name of a puree and sauce
Soufflé	sou-fle (soo-flā)	Puffed up, like omelet souffle
Suprême	su-pre-m	Name of a rich white sauce
Tamis	tâ-mi (mee)	A sieve of fine cloth, wire, also a coarse woolen cloth
Tartare	tar-ta-r	Name of a sauce
Tartine	tar-ti-n (teen)	Slice of bread, covered with preserves, etc.
Tasse	ta-s	Cup
Tortue	tor-tu	Turtle
Truffle	tru-f	Truffle
Vinaigre	vi-na-gr	Vinegar
Vol-au-vent	vo-lo-van	A small pie of delicate meat; shell fish, etc.
Xeres	kze-res	Name of a wine

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